

The experiences of Maltese elderly residents in accessing and using local urban green spaces

Darren Caruana

A dissertation presented to the Faculty of Arts in part fulfilment of the requirements for the Master of Arts in Geography (by research) at the University of Malta.

June 2025



University of Malta Library – Electronic Thesis & Dissertations (ETD) Repository

The copyright of this thesis/dissertation belongs to the author. The author's rights in respect of this work are as defined by the Copyright Act (Chapter 415) of the Laws of Malta or as modified by any successive legislation.

Users may access this full-text thesis/dissertation and can make use of the information contained in accordance with the Copyright Act provided that the author must be properly acknowledged. Further distribution or reproduction in any format is prohibited without the prior permission of the copyright holder.

Declaration of Authenticity



**L-Università
ta' Malta**

FACULTY/INSTITUTE/CENTRE/SCHOOL Faculty of Arts

DECLARATIONS BY POSTGRADUATE STUDENTS

(a) Authenticity of Dissertation

I hereby declare that I am the legitimate author of this Dissertation and that it is my original work.

No portion of this work has been submitted in support of an application for another degree or qualification of this or any other university or institution of higher education.

I hold the University of Malta harmless against any third party claims with regard to copyright violation, breach of confidentiality, defamation and any other third party right infringement.

(b) Research Code of Practice and Ethics Review Procedures

I declare that I have abided by the University's Research Ethics Review Procedures. Research Ethics & Data Protection form code ARTS-2024-00086.

As a Master's student, as per Regulation 77 of the General Regulations for University Postgraduate Awards 2021, I accept that should my dissertation be awarded a Grade A, it will be made publicly available on the University of Malta Institutional Repository.

Abstract

This dissertation seeks to better understand the relationship between elderly residents and the urban green spaces in their locality. This includes a study of participants' perceptions of these spaces in their localities. It also studies the role of these spaces in the lives of the participants, including any benefits participants may perceive themselves to be receiving from such spaces. Finally, it seeks to understand the experiences of participants in accessing such spaces in their locality. The study is a qualitative study centred on three localities: Attard, Marsa and Qormi. The study collected data from observations of urban green spaces in these three localities and from semi-structured interviews with sixteen elderly residents living in the chosen localities.

The results of the observations demonstrate that the urban green spaces in all three localities are on average of mediocre quality, particularly when compared to standards promoted by the international literature. In the interviews, participants identified several positive elements about the urban green spaces. However, they also identified and described several aspects which detract from the attractiveness and usefulness of such spaces. Half of the participants gave insightful information as to how these spaces benefited their mental and/or social wellbeing. However, many participants still described elements which detracted from these benefits. A smaller number of participants were able to describe benefits to their physical wellbeing obtained from the urban green spaces.

Most participants felt that the urban green spaces are largely accessible, but almost all participants identified and described barriers which made access more difficult. This included a number of physical and social barriers. The findings provide useful information to policymakers and urban planners as to what can be improved about urban green spaces to render them more suitable and attractive to the needs and preferences of elderly residents.

Keywords: Urban green spaces; Elderly residents; Wellbeing; Accessibility

Acknowledgements

I would like to express my sincere gratitude to my supervisor, Professor Maria Attard, for her unwavering support, insightful guidance, and encouragement throughout the dissertation process. Her expertise and patience were invaluable, and her advice consistently helped me move forward with clarity and confidence.

I am also deeply thankful to my family and to my girlfriend, Rachel, for their constant support and steadfast encouragement. Their belief in me never wavered, and I could not have completed this journey without their presence by my side.

Table of Contents

Declaration of Authenticity.....	ii
Abstract.....	iii
Acknowledgements.....	iv
List of Figures.....	ix
List of Tables.....	xii
List of Abbreviations	xiii
Chapter 1: Introduction.....	1
1.1 Research aims and objectives	2
1.2 Research philosophical worldview	3
1.2.1 Constructivist worldview.....	4
1.2.2 Transformative worldview	4
1.3 Local context.....	5
1.3.1 Population	6
1.3.2 Urban stresses	6
1.3.3 Historic background and contemporary policies	7
1.4 Dissertation structure	9
Chapter 2: Literature Review.....	11
2.1 Definitions and types of UGSs	11
2.2 Conceptual models of public space	12
2.2.1 Ownership of public spaces	14
2.2.2 Challenges to public spaces	16
2.2.3 UGS and gentrification	17
2.3 Benefits of UGSs	19
2.3.1 Physiological health benefits	20
2.3.2 Mental health benefits.....	22
2.3.3 Social wellbeing benefits	24
2.4 Access to UGSs as an important social and environmental justice issue.	26
2.4.1 Procedural and interactional elements of environmental justice	29
2.5 UGS provision and barriers	32
2.5.1 Urban green space availability.....	33

2.5.2 UGS accessibility.....	34
2.5.3 UGS attractiveness.....	37
2.6 Needs and preferences of elderly users.....	38
2.6.1 Needs and preferences based on age.....	38
2.6.2 Requirements based on perceptions of safety	38
2.6.3 Size and proximity	39
2.6.4 Neighbourhood walkability	40
2.6.5 Age-friendly features	42
2.6.6 Requirements based on socialisation	43
2.6.7 Ensuring climate-resilient UGSs	45
2.6.8 UGSs in an island context.....	46
2.7 Local context.....	47
2.7.1 Barriers to local development of UGS.....	48
2.8 UGS quality observation studies.....	49
2.9 Conclusion	50
Chapter 3: Methodology	52
3.1 Research aims and objectives	52
3.1.1 Study definition of UGS	53
3.2 Research questions.....	53
3.3 Selection of localities under study	55
3.4 Research design	59
3.4.1 Quantitative and qualitative approaches	59
3.4.2 Mixed-methods design.....	63
3.4.3 Phenomenological case studies.....	63
3.5 Research methods	64
3.5.1 Direct observations	64
3.5.2 Semi-structured interviews	72
3.6 Participant sample.....	74
3.7 Interviews and ethical considerations	76
3.8 Analysis of data.....	78
3.9 Conclusion	79
Chapter 4: Findings.....	80

4.1 UGS observations: Comparing UGSs in the three localities under study	80
4.1.1 Observations: UGS ‘Surroundings’ dimension.....	85
4.1.2 Observations: UGS ‘Access’ dimension.....	86
4.1.3 Observations: UGS ‘Facilities dimension.....	86
4.1.4 Observations: UGS ‘Amenities’ dimension.....	87
4.1.5 Observations: UGS ‘Aesthetics and attractions’ dimension	90
4.1.6 Observations: UGS ‘Incivilities’ dimension	92
4.1.7 Observations: UGS ‘Safety’ dimension	94
4.1.8 Observations: UGS ‘Potential usage’ dimension	95
4.2 Interview results analysis.....	97
4.2.1 Theme 1: Participant perception towards UGSs.....	98
4.2.2 Theme 2: Usage of UGSs	113
4.2.3 - Theme 3: Perceived benefits of using UGSs	122
4.3 Conclusion	130
Chapter 5: Discussion	131
5.1 - Research question 1: Are there differences in the quality of UGS provision between the localities under study?.....	131
5.2 - Research question 2: How do elderly residents perceive and use the UGSs in their locality?.....	133
5.2.1 Aesthetics	133
5.2.2 Infrastructure and amenities.....	134
5.2.3 Size.....	135
5.2.4 Space for children	136
5.2.5 Maintenance.....	137
5.2.6 Nostalgia and sense of place	137
5.2.7 Antisocial behaviour	138
5.2.8 UGS usage by participants.....	139
5.3 Research question 3: Which benefits do elderly residents perceive themselves to be obtaining from these UGSs?	141
5.3.1 Physical health benefits	141
5.3.2 Mental health benefits.....	142
5.3.3 Social wellbeing benefits	143

5.4 Research question 4: What are the experiences of elderly residents in accessing UGSs, and what are the potential barriers that elderly residents face in accessing these UGSs? .	144
5.5 Conclusion	146
Chapter 6: Conclusion	148
6.1 Summary of findings	148
6.2 Implications for policymakers	150
6.3 Limitations of the study	151
6.4 Further research	152
References.....	153
Appendices.....	194
Appendix A: List of UGSs in the localities understudy.....	194
Appendix B: UGS observation scoring sheet	217
Appendix C: Information letter - Maltese version.....	220
Appendix D: Information letter - English version	222
Appendix E: Letter of consent - Maltese version	224
Appendix F: Letter of consent - English version.....	226
Appendix G: Semi-structured interview guide - Maltese version	228
Appendix H: Semi-structured interview guide - English version.....	233

List of Figures

Figure 1: Malta’s urban and rural areas. The urban elements are dominant to the extent that the nation can be termed as a city-island-state. Reproduced from Main et al. (2020). ..	6
Figure 2: Location of the localities included in this study in Malta. Map drawn by the author using ArcGIS Pro.....	10
Figure 3: A definition of urban green spaces (UGSs) on a ‘green to grey continuum’. Reproduced from Baldwin (2020).	12
Figure 4: Summary of benefits of urban green spaces (UGSs). Reproduced from Loukaitou-Sideris et al. (2016).	26
Figure 5: Three components of environmental justice related to elderly residents and urban green spaces (UGSs). Reproduced from Enssle and Kabisch (2020).	30
Figure 6: Biernacka and Kronenberg’s concept of urban green space (UGS) provision. Reproduced from Biernacka and Kronenberg (2018).	33
Figure 7: Findings from a seminal study showing elements that elderly residents require for a ‘senior-friendly’ park. Source: Loukaitou-Sideris (2016).	45
Figure 8: Map of the UGSs in Attard. The map shows the UGSs (marked in green) which were included in the study. The red border delineates the urban area of Attard. Created by the author.....	81
Figure 9: Map of the UGSs in Marsa. The map shows the UGSs (marked in green) which were included in the study. The red border delineates the urban area of Marsa. Created by the author.....	81
Figure 10: Map of the UGSs in Qormi. The map shows the UGSs (marked in green) which were included in the study. The red border delineates the urban area of Qormi. Created by the author.....	82
Figure 11: UGS Modified RECITAL Observation Tool Scoring (The range and distribution of scores obtained by the UGSs in each locality from the modified RECITAL tool). Created by the author.....	83
Figure 12: Modified RECITAL Dimensions (Percentage of the score for UGSs out of the possible maximum). Created by the author.	84

Figure 13: Themes which emerged from participant interviews. Created by the author.	97
Figure 14: ‘Ġnien l-Istazzjon’ (UGS A5). This UGS in particular was particularly praised by the residents of Attard for its aesthetic qualities. Photograph taken by the author.	99
Figure 15: Flowerbeds in San Anton Gardens (UGS A1). Flowers were praised for adding colour and beauty to UGSs. Photograph taken by the author.	100
Figure 16: UGS Q7 is one UGS praised for its infrastructure, including safe pathways, fencing and lighting. Photograph taken by the author.	101
Figure 17: A playground within an UGS. Ġnien Federico Maempel (UGS Q8) is one of the UGSs which provides space for children to play. This is particularly as it allows the elderly to experience such places with their grandchildren. Photograph taken by the author.	103
Figure 18: Benches observed to be poorly maintained. One bench (a) in UGS A10 (Il-Ġardina tal-Kromb) has been damaged whilst the other (b) is found in UGS Q14 covered in bird droppings. Photographs taken by the author.	106
Figure 19: Poorly irrigated saplings appear to have been neglected and/or abandoned in UGS A11 (Ġardina Pierre Muscat). Poor maintenance with regard to vegetation was a common element impacting participant perceptions of UGSs. Photograph taken by the author.	107
Figure 20: The poor state of vegetation in UGS M5 which has been described above by participant 15. Parts of the UGS are characterised by dried and overgrown vegetation which is clearly in a state of neglect. Photographs taken by author.	108
Figure 21: A typical small UGS - UGS A10 (Il-Ġardina tal-Kromb). Participants 2 and 6 explain that despite the aesthetic value of these UGSs, they are not attractive as they are small and there is not much to do in them. Photograph taken by the author.	111
Figure 22: ‘Misraħ Kola (UGS A12), an UGS which despite possessing an abundance of trees, is also greatly dominated by hard surfaces rather than soil. This has been identified as a shortcoming of certain UGSs by some participants. Photograph taken by the author....	112
Figure 23: Ġnejnet il-Kan. Karm Grech (UGS Q9). Despite its small size and proximity to traffic, UGS Q9 was described by some participants as an important place where they could sit and meet with other people to socialise. Photograph taken by the author.	115

Figure 24: An UGS (Q 20) with a well-maintained walking path. Two participants with poor mobility levels felt that small UGSs such as this one were important to providing a safe environment in which they could go for a short walk. Photograph taken by the author. 123

Figure 25: Benches surrounded by trees in UGS Q1 (Gnien De La Cruz). According to some participants, UGSs can help create zones of relative peace and tranquillity in contrast to the busy urban nature of their surroundings. Photograph taken by the author. 125

List of Tables

Table 1: Descriptive statistics for the localities under study. Compiled from NSO (2023).	58
Table 2: The structure of the modified RECITAL observation tool which has been used in the UGS observations. Adapted from Knobel et al. (2021).	69
Table 3: The structure of the scoring system used by the RECITAL observation tool. Adopted from Knobel et al. (2021).	71
Table 4: Participant information collected by the author. Created by the author.	75
Table 5: Dimension scores - Surroundings (Characteristics of the neighbouring area). Created by the author.	85
Table 6: Dimension scores - Access (Measuring of accessibility to the site). Created by the author.	86
Table 7: Dimension scores - Facilities (Presence and quality of features that allow for the realisation of specific activities). Created by the author.	87
Table 8: Dimension scores – Amenities (Presence and quality of features that make the UGS more comfortable, convenient or enjoyable). Created by the author.	89
Table 9: Dimension scores – Aesthetics and Attractions (Measures of beauty and attractiveness). Created by the author.	91
Table 10: Incivilities (Elements of characteristics that make the UGS less enjoyable). Created by the author.	93
Table 11: Dimension scores – Safety (Elements or characteristics that make UGS feel safe). Created by the author.	94
Table 12: Dimension scores – Potential Usage (Measures of suitability for different activities). Created by the author.	96

List of Abbreviations

ERA: Environmental and Resources Authority

NSO: National Statistics Office

UGS: Urban Green Space

UGSs: Urban Green Spaces

WHO: World Health Organisation

Chapter 1: Introduction

Whilst numerous studies have been centred on Urban Green Spaces (UGSs), the academic literature has not been successful in providing a universally agreed-upon definition of the term (Knobel et al., 2021). These numerous definitions largely differ based on the context of the individual study which is employing the term. Schipperijn et al. (2013) define Urban Green Space (UGS) as “all publicly owned and publicly accessible open space with a high degree of cover by vegetation, e.g. parks, woodlands, nature areas and other green space. It can have a designed character as well as a more natural character” (p.110). Schipperijn et al. (2013) also add that these spaces must be physically accessible.

The importance of UGSs has been highlighted by numerous studies. UGSs reduce the urban heat island effect and thus lower urban temperatures (Galdies & Lau, 2020; Salata & Yiannakou, 2023). This, in turn, leads to a more liveable environment, with temperatures which encourage active transportation, that is, modes of travel that rely on physical activity (Ta et al., 2021). It also enables energy efficiency in nearby buildings, which enjoy the climate benefits provided by the UGSs, such as shaded buildings being less reliant on air conditioning (Claus & Rousseau, 2012; Tan et al., 2021). Studies such as those of Hansen (2017) and Greene (2024) argue that UGSs are important in mitigating the impacts of climate change on urban spaces. More specifically, UGSs help to mitigate the impacts of heat waves (Varentsov et al., 2023), with particular studies highlighting this mitigating effect in Mediterranean countries (Delgado-Capel et al., 2023). UGSs can also be a tool for stormwater management, reducing the risk or severity of flooding within the urban environment (McFarland et al., 2019). Additionally, UGSs have the positive impact of increasing biodiversity within urban spaces (Leal Filho et al., 2020). This contributes to the aesthetics of urban spaces and increases ecosystem services, that is, benefits derived from ecosystems available in such spaces (Millennium Ecosystem Assessment [MEA], 2005). In certain contexts, UGSs have also been found to have a positive impact on air quality (Hewitt et al., 2020). Thus, it is evident that UGSs are important in making our urban spaces more liveable, particularly in the face of the challenges posed by global climate change.

UGSs are also important for the benefits they offer to the residents in the urban areas. UGSs offer numerous physical health benefits (Gianfredi et al., 2021) as well as mental health benefits (Wood et al., 2017) to the residents in areas with UGSs. Moreover, UGSs improve the aesthetic quality of a neighbourhood (Wang et al., 2019) and in certain contexts can even

raise property values (Panduro & Veie et al., 2013). Finally, UGSs act as important spaces which foster social interaction and cohesion (Wan et al., 2021). Against this backdrop, this dissertation is focused on the relationship between elderly residents and UGSs. It seeks to better understand the role of UGSs in the lives of the elderly in select localities in Malta.

The research was inspired by the interest and concern that the researcher has for the elderly in Malta with regard to access to UGSs and the enjoyment of the various benefits provided by UGSs. This concern first arose when the researcher learned, from elderly relatives in his own family, the difficulties that elderly members could encounter in accessing UGSs in their localities and how confined they felt within their own homes. The author of this study understands that elderly people, unlike working-age adults, are often more dependent on UGSs rather than natural rural areas for ecosystem services (Chaudhury et al., 2016; Satariano et al., 2012). This is because some elderly people may not be confident in their ability to access natural areas since these areas often do not offer much-needed facilities, the security of people nearby and the presence of smooth surfaces, amongst other things. Thus, UGSs may play a significant role in the wellbeing of elderly people. However, in the context of a densely populated, rapidly urbanising, small Mediterranean island, there are many challenges and threats to the availability of quality UGSs which serve the needs of the local elderly population. Thus, the researcher was eager to investigate the present circumstances and explore the potential for improvement. This chapter serves as an introduction to the research. It outlines and describes the aims of the study, the research objectives and it highlights its contributions. The chapter also outlines the main structure of the dissertation and provides the relevant valuable context within which the study is placed.

1.1 Research aims and objectives

Literature shows the importance of UGSs for the wellbeing of elderly people, particularly those who are unable to access other forms of greenery and nature (Enssle & Kabisch, 2020). This study aims to understand the relationship between UGSs and the elderly residents of three select localities: Attard, Marsa and Qormi. Through the study, the researcher aims to investigate the perceptions of elderly residents with regard to UGSs in their locality. This includes perceptions with regard to UGS quality, particularly the ability of UGSs to satisfy their needs and preferences. The study aims to shed more light on how, if at all, UGSs are contributing to the wellbeing of elderly people and also investigates the participants' ability to access UGSs within their locality. The study aims to examine the experiences of elderly

residents in their access and use of UGSs and the potential benefits they provide. The objectives of the study are as follows:

1. To explore the quality of the UGSs in the localities under study, namely Attard, Marsa and Qormi, and to make a comparative analysis between the localities.
2. To understand elderly residents' preferences and usage of urban green spaces.
3. To understand elderly residents' self-perceived benefits from urban green space usage.
4. To understand elderly residents' experiences in accessing urban green spaces and to identify potential barriers to this access.

The study contributes to the local literature regarding UGSs in Malta. It is centred on the UGSs of three specific localities and their relationship with a particular demographic, adding a further focus on the benefits of UGSs. The study also contributes valuable findings and conclusions to policymakers and urban planners. Firstly, the study provides a better understanding of the relationship between a sample of elderly individuals and the UGSs in their locality. This includes valuable information on the perceptions of these elderly individuals with regard to the current state of UGSs in their localities. The study, therefore, contributes to the identification of the strengths and weaknesses of UGSs through the perspective of the participants. The study also sheds light on the needs and preferences of these elderly residents, thus further guiding policymakers and urban planners in creating UGSs which are able to cater to these needs and preferences. Finally, the study also demonstrates the role of UGSs in the lives of the participants, thus enabling policymakers to better gauge the successes and failures of existing UGSs and encourage further considerations during the planning phase of such projects.

1.2 Research philosophical worldview

Philosophical consideration is an essential component of any research approach and methodology. Indeed, the approach, methods, attitudes and biases of a researcher are shaped by his philosophical worldview. The constructivist and the transformative worldviews have resonated the most with the ideas and attitudes held by the researcher and with the aims of the current study.

1.2.1 Constructivist worldview

The constructivist philosophy guiding this research regards reality as subject to the individual's perspectives and circumstances rather than as an objective, discoverable truth waiting to be measured and quantified. This is because this reality is often shaped by experiences, environment and identity, amongst several other factors (J. W. Creswell & J. D. Creswell, 2018). Therefore, constructivists, unlike positivists, do not seek to find an objective relationship between a phenomenon and a variable (Denzin & Lincoln, 2018). Instead, constructivists study individuals' perceptions, experiences and interpretations of their truths and through this data, they create themes and patterns which describe these realities and experiences (Charmaz et al., 2018). Thus, they obtain a broader understanding of the experiences of individuals or of a situation. This is often done by considering contextual factors such as temporal, spatial, social and situational influences (Denzin & Lincoln, 2018). This is in concurrence with the nature of this study and its aims.

This constructivist approach allows this research to include multiple perspectives and the recognition of several different realities and truths. It is thus an ideal guiding principle for research in the social sciences. This is especially when attempting to learn more about people's perceptions and experiences, given that it allows for a vast spectrum of data and conclusions to emerge (Charmaz et al., 2018).

1.2.2 Transformative worldview

The transformative worldview also reflects the researcher's philosophical worldview. The combination of these two worldviews, the constructivist and transformative, is entirely possible and has shaped a number of recent studies (Denzin & Lincoln, 2011).

The transformative view highlights the role of the research and of the researcher in contributing towards meaningful change in society, in an attempt to create a more equitable and just system and state of affairs (Creswell & Creswell, 2018). This is especially with regard to marginalised and disadvantaged groups and minorities. Thus, transformative research encourages the inclusion of a political agenda in order to bring about social transformation towards social justice (Mertens, 2015). The researcher does intend for this research to contribute to creating environmental and social justice. The research is intended to provide useful information for policymakers and city planners so that they may provide better access to UGS. Thus, the study intends to provide the opportunity for change and for social action. The focus of the research on elderly citizens is also an attribute of

transformative research, with the intent to advance equity and social justice. In summary, this research is largely guided by constructivist principles but also borrows greatly from elements of the transformative principles. The diversity of elements strengthens and endows the research with the various and respective benefits from both philosophical schools of thought.

1.3 Local context

The Maltese islands consist of three main islands and a number of smaller, uninhabited islands (Gauci & Schembri, 2019). Located at the centre of the Mediterranean, just 80 km south of Sicily, the islands enjoy a Mediterranean climate. This has been traditionally characterised as a climate of hot, dry summers and mild wet winters, albeit this has been recently threatened by the advent of global climate change (Galdies, 2022). 28.3% of the islands are developed areas, according to 2018 CORINE land cover statistics (Azzopardi, 2020). The developed urban centre is mostly built around the harbour areas from which one extends outwards into the outer villages, which, due to urban sprawl, have become enlarged into what one could term as urban suburbs (Main et al., 2020). Thus, a substantial portion of the Maltese islands are urbanised (See Figure 1). Given the small size of the islands and the relatively large population, urban stresses are readily felt on the islands. Considering the influence and dominance of the urban sphere on the relatively small Maltese islands, some academics have even termed Malta as a city-island-state (Main et al., 2021).

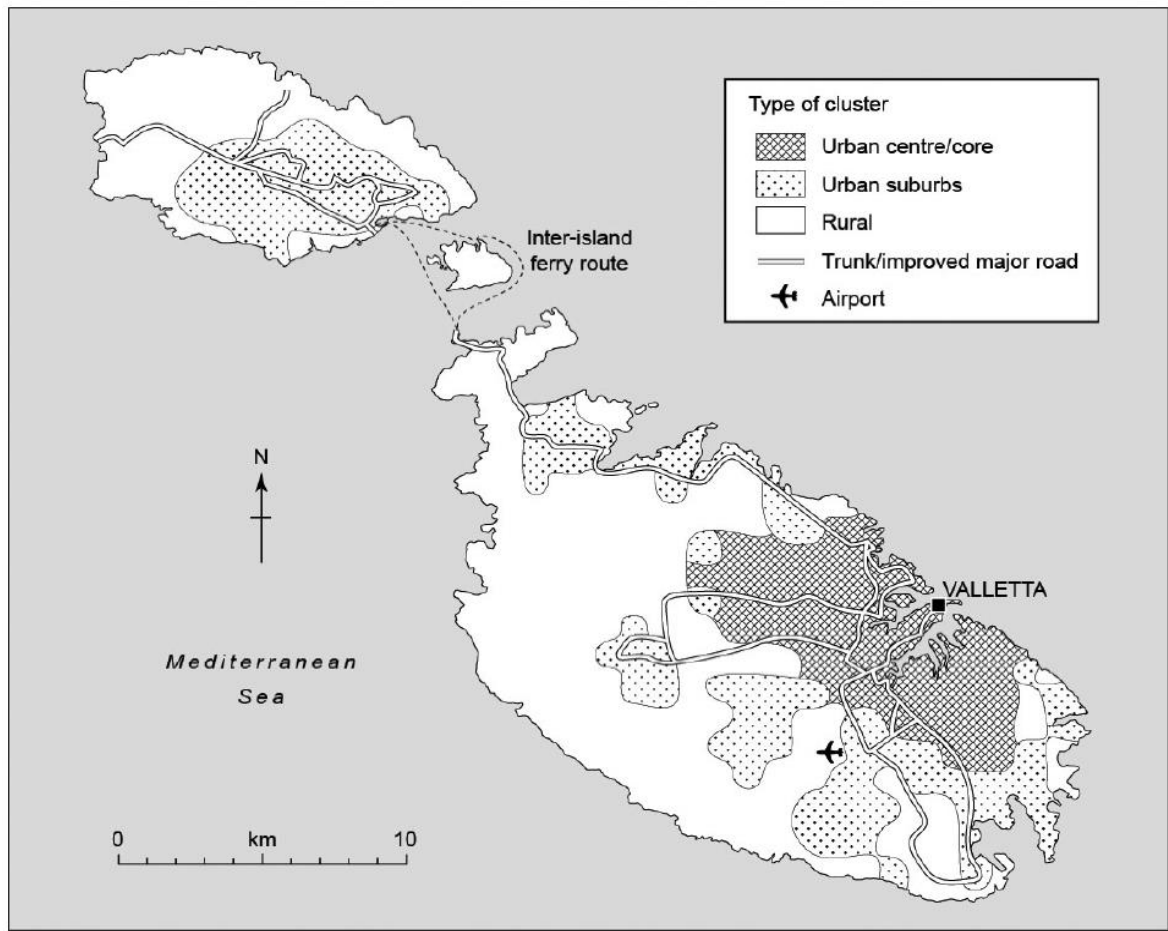


Figure 1: Malta's urban and rural areas. The urban elements are dominant to the extent that the nation can be termed as a city-island-state. Reproduced from Main et al. (2020).

1.3.1 Population

One aspect of the local context which cannot be ignored is that of population and demographics. The latest census report shows that the Maltese Islands have a population of 519,562 people (National Statistics Office [NSO], 2023). Also relevant to this study is the fact that, according to the latest census report, 97,642 Maltese people are aged over 65 (NSO, 2023). Population density is also a factor which adds context to the study. Having an area of 315.15 km², the Maltese islands have a population density of 1649 people/km² (1948 people/km² for Malta and 572 people/km² for Gozo and Comino) (NSO, 2023).

1.3.2 Urban stresses

Both the Maltese rural and urban spheres have experienced stresses exerted by development and an increasing population. The relatively large Maltese population, combined with the large tourism and immigration that Malta experiences, have resulted in very densely

populated areas and, thus, a large impact on the character of its urban sphere (Main et al., 2021). This includes the predominance of traffic, construction, noise and air pollution as well as overcrowding and spaces which are not aesthetically pleasing (Main et al., 2021; Scheiber, 2021). The urban spaces often also lack greenery (Scheiber, 2021). Frustrations are commonly held amongst the Maltese populace with concerns about urban stresses and population density impacting wellbeing and quality of life (Galea, 2024; Hudson, 2019). Such urban stresses are in fact widely acknowledged to be negatively affecting the wellbeing of the Maltese population (Scerri, 2020), particularly the elderly demographic (Galea, 2019). It is in this context that the study of UGSs becomes readily apparent.

Scheiber (2020) argues that the correct design of open spaces can greatly impact the perceptions of residents and their social wellbeing within these spaces. However, in a separate study, Scheiber (2021) found that in the two areas included in her study, there were fewer recreational open spaces than what is required by the international standard. This means that there are fewer spaces to alleviate the urban stresses highlighted previously. Scheiber's (2023) study found that open spaces in Malta also often have poor sustainability qualities. These poor qualities include the fact that most open spaces are not designed to mitigate the impacts of global warming. They are also often oriented towards vehicles rather than pedestrians (Scheiber, 2023). Local open spaces are also often poorly vegetated, covered in hard surfacing and offer little shade (Scheiber, 2021). This is particularly concerning given the vulnerability of urban areas in the Mediterranean to high temperatures and the need to introduce nature into urban spaces (Main et al., 2020). Scheiber (2021) continued to argue that there are numerous open spaces which could be converted into recreational areas that would benefit local citizens.

1.3.3 Historic background and contemporary policies

Historically, several local green spaces owe their origins to Malta's former rulers. Il-Buskett in Siggiewi is arguably the most famous green space in the islands. Although it is not urban, it is a prime example of such a space provided by foreign rule. This semi-natural woodland in the west of Malta owes its origin to the Knights of St. John, who planted it so that they could pursue their hunting pastime (Scerri, n.d.) Gardens such as San Anton in Attard (Micallef, 1985) and Romeo Roman Garden in Santa Venera (Calleja, 1991) also owe their origins to the Knights. Unlike Buskett, these are located within the urban spheres and function as UGSs. The British also built several gardens, most famously those known as 'tal-

Kmand', which were situated on the outskirts of numerous localities (Bezzina, 2019). Due to urban sprawl, these have now also become part of the urban sphere and function as UGSs. Following independence, successive Maltese governments have continued to build UGSs.

Since 1990, urban development had largely been conducted in accordance with the Structure Plan (Sultana, 2024). This plan largely emphasised the restriction of development within designated development zones. It had thus established 'Outside Development Zones'. This resulted in the protection of environmentally significant areas from development. Whilst it did contribute to control of urban sprawl, lack of enforcement in certain cases did mean that 48% of new artificial surfaces were built outside the development zones (Sultana, 2024). The Structure Plan also led to the increased concentration of development in the urban sphere, and very few areas remained as UGSs (Sultana, 2024). Post-2013, Malta experienced an even greater construction boom, with a policy shift that significantly encouraged further development within the urban zone, particularly with regard to the vertical development of existing buildings (Pace et al., 2023). This has resulted in urban spaces which are more densely populated and created a larger demand on the existing infrastructure. Meanwhile, Outside Development Zones also experienced a level of development (Pace et al., 2023).

Malta has experienced significant economic growth in the past decade, and this has been reflected in the development which has taken place within Malta's urban sphere (Briguglio, 2024). However, Malta is also experiencing issues which negatively impact the environment, including aggressive construction, weak enforcement of existing regulations and the resulting noise and air pollution. The aesthetic appearance of parts of the urban sphere has also degraded. There are also issues related to strains caused by the net population increase and tourist flow on the existing infrastructure. On the whole, one can argue that whilst the standard of living has increased, the quality of life is being challenged, particularly within the urban sphere (Briguglio, 2024).

In 2015, the Strategic Plan for the Environment and Development (SPED) became the guiding document with regard to construction and development (Pace et al., 2023). Policy documents such as the SPED have acknowledged the challenges introduced by the densification of urban areas on both the aesthetic qualities and the quality of life within these areas (Scheiber, 2023). The document also acknowledges the insufficient number of UGSs and the impact that this is having on residents and their lifestyles (Scheiber, 2023). The national government has also acknowledged that UGSs, have a role to play in combating the

impacts of climate change on both humans and biodiversity (Carabott, 2022). The government also acknowledges their role in protecting human physical and mental health and social wellbeing. Policy across multiple levels of government is therefore aimed at improving the quality of life in urban neighbourhoods through sustainable practices, including UGSs (Scheiber, 2020).

For example, UGSs have been recognised as an important aspect of a healthy urban environment, according to the Environment and Resources Authority (ERA)'s website (ERA, n.d.). ERA has also committed to following European Union (EU) based conceptions of green infrastructure. This conception consists of a network of interconnected, multifunctional infrastructure which offer ecosystem services and involve various stakeholders in their planning and design (ERA, 2019). A part of this includes a commitment to increasing the number of UGSs in localities around Malta. This is to be spearheaded by a local project known as 'Project Green', which will seek to create high-quality UGSs in various localities (Zammit, 2023). In this context, with both the stresses of development on the urban sphere and the importance of UGSs becoming recognised locally, studies focused on UGS are very important and relevant. It is also relevant to study UGSs given the recent commitment to numerous UGS-related projects,

1.4 Dissertation structure

The dissertation first introduces the topic by providing key information in this introductory chapter. This provides important context on the local situation and highlights the relevance and need for such a study. The international and local literature concerning elderly wellbeing in urban spaces and the importance of UGSs to their wellbeing is presented and discussed in the 'Literature Review' chapter (Chapter 2). The literature includes information concerning the needs and preferences of elderly participants as well as factors impacting UGS usage and accessibility. This second chapter is essential in identifying the key ideas and theories in this field and the prevailing approaches to these issues internationally. The literature thus forms a further basis for the methodology of the dissertation.

The study focuses on three localities in Malta: Attard, Marsa and Qormi (See Figure 2). Data is collected in two stages, firstly through direct qualitative observation of UGSs and then through semi-structured interviews with elderly participants residing in these localities. This process is described in further detail in the 'Methodology' chapter (Chapter 3). In the 'Findings' chapter, the data from the observations and semi-structured interviews are

presented and described (Chapter 4). In the ‘Discussion’ chapter (Chapter 5), the findings from the study are discussed in view of the existing literature in order to answer the research questions. The key contributions of this study are also identified. A concluding chapter (Chapter 6) highlights these contributions, describing possible steps which can be taken to improve the situation with regard to the provision of UGSs for elderly residents in these localities. The limitations of the research are discussed, and suggestions are made for further studies. As has been explained, the following chapter reviews local and international literature with regard to UGS. This includes literature centred on the relationship between elderly residents and UGSs, as well as literature focused on UGS quality, benefits and accessibility.

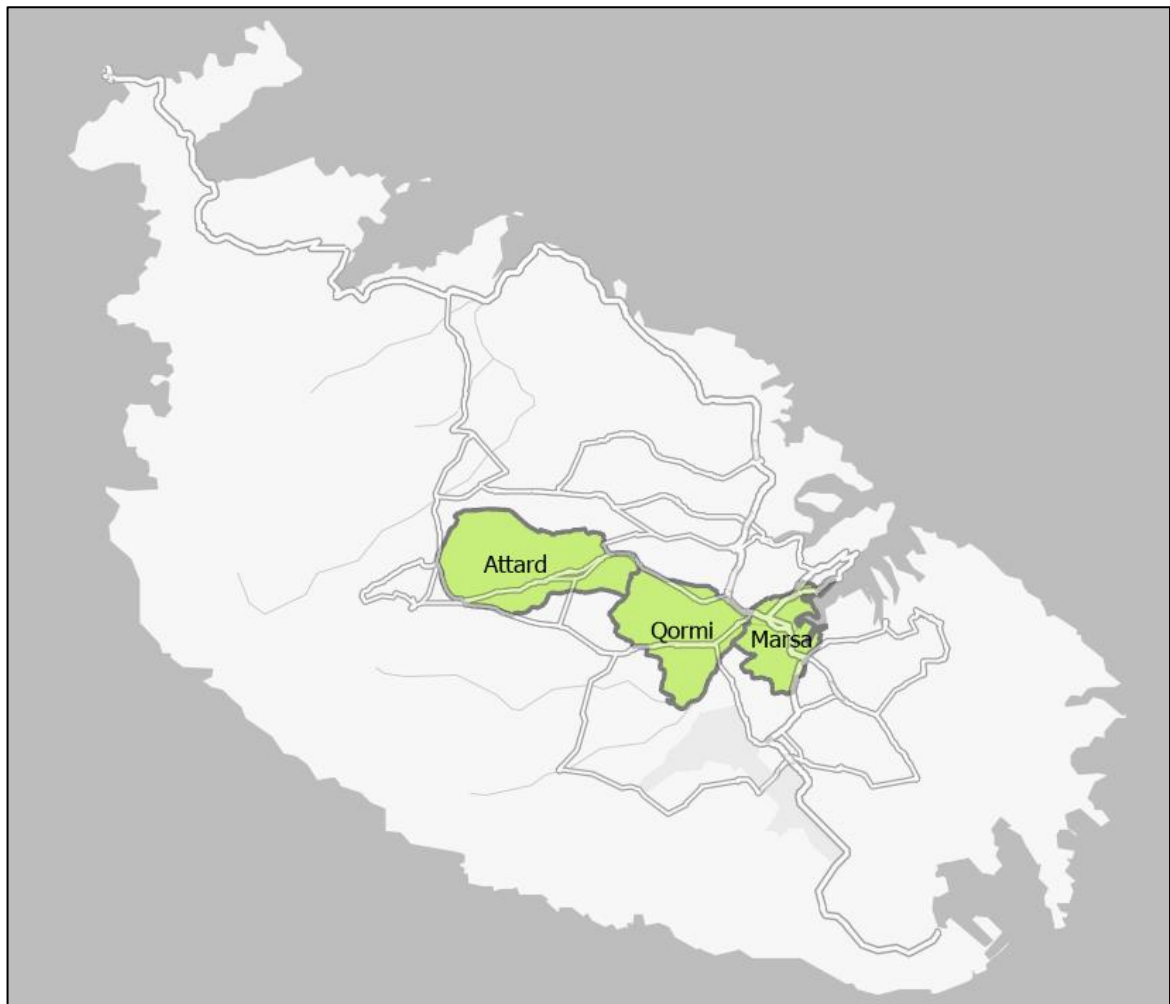


Figure 2: *Location of the localities included in this study in Malta.* Map drawn by the author using ArcGIS Pro.

Chapter 2: Literature Review

The increasing urban nature of societies worldwide poses several challenges to the wellbeing of the urban dweller (Mouratidis, 2021). Given the heightened and evident pressures on human wellbeing due to population densities, urban stresses and climate change on urban life, as well as the increasing recognition of nature-based solutions as a solution to these pressures, much literature is available on the subject. This chapter presents a review of the literature in order to frame and contextualise important themes and theories relating to this study and the research field.

2.1 Definitions and types of UGSs

As noted by Zou and Wang (2021) in their review of developments and gaps in the literature on UGSs, as well as by other academics (e.g. Ismayilova & Timpf, 2022), there is no actual clear-cut definition of UGS which has been agreed upon by researchers in this field. However, most definitions are fairly similar. A frequently cited definition is that offered by Swanwick et al. (2003, p. 97-98) who defined green spaces as “land that consists predominantly of unsealed, permeable, 'soft' surfaces such as soil, grass, shrubs and trees”. This extended the definition of UGS as “an umbrella term for all areas of land covered by this definition of green space, whether or not they are publicly accessible or publicly managed. It includes parks, play areas, and other green spaces specifically intended for recreational use, as well as other green spaces with other origins” (Swanwick et al., 2003, p. 97-98). Naturally, all of this is green space within an urban context. Heckert (2013) also includes lakes and rivers as part of UGS.

Other definitions allow for more flexibility. Baldwin (2020) considers UGSs to be diverse in nature and holds that they manifest on a ‘green to grey continuum’ (See Figure 3). Thus, UGSs can range from large and wide areas such as open spaces and urban forests, but also smaller, less green manifestations such as brownfield sites or rows of trees on the side of a street or in open spaces. According to Stahle (p.5, 2010), “green space is simply open space (partly) covered by vegetation or natural features.” Other academics such as Andrews (2014), Heckert (2013) and Rasidi et al. (2012) also provide similar definitions.

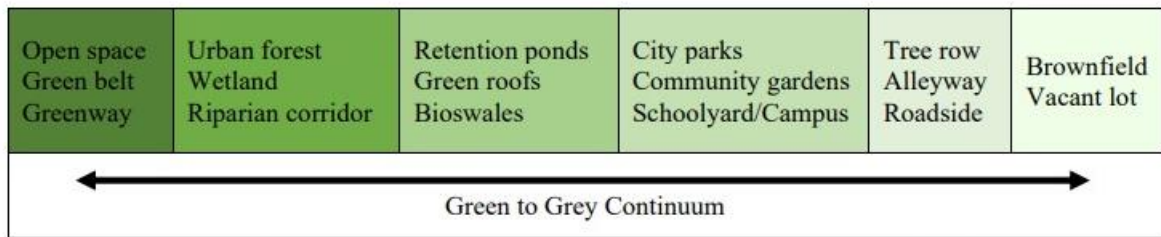


Figure 3: *A definition of urban green spaces (UGSs) on a 'green to grey continuum'.*
Reproduced from Baldwin (2020).

There also does not exist a comprehensive and agreed-upon classification of different types of UGS (Ismayilova & Timpf, 2022). Most academics have created their own classifications (e.g. Baldwin, 2020; Stahle, 2010; Swanwick, 2003). This has the advantage of tailoring classifications according to the needs and circumstances of each study; however, it can also lead to difficulties and shortcomings when making comparisons across studies. Moreover, it may also mean that certain UGSs are excluded from studies (Ismayilova & Timpf, 2022). For example, in their study of user preferences for different UGS types, Macháč et al. (2022) categorise UGSs into natural parks, semi-natural parks and urban gardens. However, they also acknowledge that they excluded green infrastructure, which includes lawns, hedges, flowerbeds and green roofs. This demonstrates the importance of what we choose to include and encompass in our definitions, as our results are often influenced by what we include in our classifications. Another important term which we often encounter is 'green corridor', which is a network of UGSs and features which help to preserve biodiversity within cities and to make accessible to the urban community the various ecosystem services which are provided by nature (Haase et al., 2017). Meanwhile, nature-based solutions are natural tools used to enhance ecosystem services within a particular place (Haase et al., 2017).

2.2 Conceptual models of public space

The importance of public space, the nature of public space as well as the threats to it have long been debated and discussed in the academic literature, particularly in the last decade of the 20th century (Bodnar, 2015; Mitchell, 1995). Thus, one enters the field of the politics of public spaces, which analyses the public's relationship with public space. Traditional models of these relationships were analysed as part of this review. Iveson's study (1998) described four models of public space. These were the ceremonial, community, liberal and multi-public models of public space. Whilst such models are dated, they do contribute to how we

construct and frame our perceptions of public space today. The ceremonial model of public space places an emphasis on symbols and identity which public spaces may provide (Iveson, 1998). This can be extended to UGS. However, given that various ethnic groups, which today are being given more recognition in the public sphere, have different identities and symbols, such a model may be dated or require more nuance. Nonetheless, such a model can frame our conception of UGS as a space which can offer pride and identity to a community, or groups within that community (Knez & Eliasson, 2018).

Meanwhile, the community model of public spaces conceptualises public spaces as spaces for the fostering and development of community bonds (Carr et al., 1992; Iveson, 1998; Katz, 1994; Newman & Kenworthy, 1992). Thus, such spaces must facilitate access, social interactions and both formal and informal activities. Such a model therefore often advocates walkability, accessibility and pedestrianisation of such spaces. This conception is also reflected in modern research on the role of public spaces. Carmona (2019) also argues that public spaces should encourage social cohesion of the community. This is to be achieved by creating spaces not overwhelmed by traffic and business and the creation of spaces which are attractive to various groups in society. The public space is therefore essential for the accumulation of social capital and belonging within the community (Brain, 2019). Thus, for the purposes of this research, UGS may not only be conceptualised as tools for providing ecosystem services, but also for fostering the development of community ties.

The liberal model of public spaces emphasises the importance of making public spaces accessible for all identity groups (Iveson, 1998). Thus, taking this model into account in the analysis of UGS, one would consider whether such spaces are accessible to groups which are easily marginalised. Whilst elderly men may form part of this group, this group can also include elderly women and elderly people who are from different nationalities and ethnic backgrounds. Nonetheless, this model was criticised for being inclusive in theory but promoting conformance in practice. This is because marginalised groups are often only able to access the public sphere if they conform to the values of the dominant group. Thus, as an example, women would only be welcomed into a public space if they dressed and behaved in a certain way (Iveson, 1998). The same could be said for people of different ethnicities. Regarding the elderly, whilst the liberal model encourages their use of the public space in theory, in practice, it is often the case that modern public spaces may not always be age-friendly (Younes et al., 2024).

Thus, from these criticisms emerged the multi-public model of public space. This model emphasised the need for marginalised groups to create and obtain their own spaces, in which they could establish their dominance and practise their norms (Fraser, 1990; Iveson, 1998). This has its drawbacks, especially in terms of ethnicity, as the establishment and growth of such spaces may be perceived as a threat and challenge to dominant groups, sparking tense and hostile reactions. It also leads to societies which are segregated. Thus, whilst these models may be dated, they offer important conceptualisations of public space which are still relevant today.

2.2.1 Ownership of public spaces

More recent literature has continued to focus on the issue of public space ownership. Whilst public UGS can be made available, this is not necessarily the same as the community feeling a sense of ownership towards that space. Patterson (2010) uses the term “public legitimisation”, which he describes as “a process by which particular urban spaces become recognised as legitimately representing the collective interest and/or identity of a local public” (p.1). Patterson adds further detail by noting that public spaces can be legitimised by both their practical functions and benefits, but also through their symbolic functions and the attachments that a community develops towards such spaces. This is often most demonstrably evident when a particular public space, which has achieved public legitimisation, is exposed to an external threat (Fuller & Carter, 2015; Patterson, 2010). In such cases, one can often witness the fierce backlash and protective nature of the community against the bodies proposing such changes.

Patterson (2010) argues that legitimisation is based on four main factors. Firstly, access is an essential component to achieving legitimisation as bonds and ties which communities have with a place are harder to establish without access. Secondly, legitimisation is also dependent on ownership, administration and rules which can serve to both encourage and restrict access and interaction with public spaces. Thirdly, the design and physical appearance of the public space is another factor which impacts the nature of the ties that it will establish with the community. Finally, Patterson (2010) also questions whether the age of a public space may also impact its legitimisation. There are arguments for and against this notion. Whilst the lived experiences of individuals in a space may lend it legitimisation, the prospect of future experiences and an improved state may also be a cause for legitimisation. Patterson (2010) argues that any changes in public spaces are ultimately a question of trust in the

administration, that it will change things for the better. Thus, if such a trust is broken, this may lead to scepticism towards new projects.

Other authors have also added their contributions as to which factors promote a sense of ownership from the public over an UGS. Gunnarsson et al. (2017) found that people with pro-environment views are more likely to have positive attitudes towards UGSs. People who are more oriented towards nature are more likely to visit UGSs, despite having their own gardens or yards (Lin et al., 2014). They are also likely to travel longer and spend more time there than people who are not oriented towards nature. Thus, Lin et al. (2014) suggest that to help people access the ecosystem services of UGSs and develop a sense of ownership over them, it may be more important to improve people's attitudes to nature, rather than decreasing the distances to their nearest UGS. People are also more likely to value UGSs which have a high level of biodiversity, and thus, urban planners must also heed this advice from researchers (Gunnarsson et al., 2017). Whilst distance, size and features are often important in determining if an UGS is valued, other factors such as the personal characteristics of the users and the culture of the communities are also important (Kothencz et al., 2017). Cohen et al. (2010) argue that promoting events and activities within parks is an effective way to increase park usage and improve public perceptions.

Meanwhile, a space can also experience delegitimacy, whereby it is instead negatively and poorly regarded by the community. Such spaces may even be perceived as threats to the needs and wellbeing of that community as well as being harmful to their collective identity (Patterson, 2010). In a study in Hong Kong, whilst most UGSs were viewed favourably, others were not, as residents noted that they encouraged crime and antisocial behaviour by providing darker spaces with reduced visibility and produced large amounts of organic litter and bird droppings (Lo & Jim, 2012). The authors also emphasise the importance of local context, with people in Hong Kong being particularly wary of the dangers of avian flu being contracted, as a result of birds being attracted to the green spaces. Thus, this is a very nuanced issue. As has been mentioned earlier, some spaces will also be contested and will be interpreted differently by different groups and individuals. Perceived direct benefits or detriments to the user's wellbeing are known to have a direct influence on the user's perceptions of UGS (Kothencz et al., 2017). Thus, even in high-quality UGSs, it is an issue of perception as much as it is an issue of service provision.

2.2.2 Challenges to public spaces

In their respective discussion on the literature concerning public space, both Bodnar (2015) and Colding et al. (2020) point out that the biggest threat to public space has been attributed to commercialisation and privatisation. This has also frequently been a consequence and indeed a necessity for urban regeneration projects which sought to re-instil life into decaying urban areas (Bodnar, 2015). However, this has often resulted in the exclusion of certain groups from the public space, including ethnic minorities and homeless people (Bodnar, 2015). This is naturally in contradiction with the very concept of public space and a direct challenge to it. At times, this attempt to keep out certain segments of the population has resulted in increased barriers to public spaces, including fees and security personnel, which do not easily allow access to certain groups and gated areas. The influence of private parties in decisions on public spaces, and the marginalisation of minority or vulnerable groups, can also result in changes to the public space to such a degree that it can no longer offer its important ecosystem and cultural services to all groups. Madanipour (2010) argues that this process is harming the urban-social fabric. Whilst Rahtz et al. (2023) do not discourage private involvement in public spaces, and deem it somewhat necessary in some instances, the authors do encourage maximum participation and heeding of the public, with representations of all its various groups and identities. This contribution is essential to the preservation of public spaces, which truly serve the local communities.

The increased density of urban areas is also a threat to existing public spaces. Unfortunately, as countries become more urbanised and cities expand, the limited areas left as UGSs or potential UGSs are becoming increasingly under threat and face pressure from retail, housing and commercial development interests and transport infrastructure (Hunter et al., 2019). Studies show that dense cities have less green spaces and less tree canopy cover on the whole (McDonald et al., 2023).

UGSs in dense urban environments are especially important since in the urban environment, other sources of ecosystem services are more limited. This includes services such as flood mitigation, cleaner air and combating the urban heat island effect (Lin et al., 2017). Moreover, these are often able to benefit a greater number of people due to the densely packed nature of urban areas (La Rosa, 2013; Min et al., 2011). Small UGSs are particularly well-suited for this purpose as they can be distributed in smaller pockets throughout densely built areas (Ye et al., 2018). Studies have also explored the potential for such spaces to be

built along linear corridors such as roads and rivers and the formation of networks by connecting smaller UGSs within a city (Chen et al., 2021). Such spaces can also provide mental health and social interaction benefits (Peschardt et al., 2012).

A number of studies find that access to UGSs can be easier in dense inner cities due to shorter travel distances and links to public transport (Ihlebaek et al., 2021; Nieuwenhuijsen, 2021; Rojas et al., 2016). Studies have shown how even older adults are more able to access UGSs in dense inner cities, provided that there are small UGSs distributed and available, as well as good transport links (Lau et al., 2021). Nonetheless, the densification of cities can also potentially threaten UGSs, as parts of certain UGSs are sacrificed to urban development and construction (McFarlane, 2020).

2.2.3 UGS and gentrification

Whilst the 21st century has seen an increased push to add greenery to urban spaces, such investments can contribute to gentrification. Anguelovski et al. (2018) note that new, sustained and effective investments into traditionally overlooked neighbourhoods, often with low-income or minority residents, often result in what they term ‘environmental gentrification’, that is, gentrification resulting from large improvements to the environment. In such cases, this results in the low-income locals being replaced by richer residents from outside the community, changing the identity of the community and resulting in displacement (Kim & Wu, 2022). Meanwhile, more specifically, effective investments into the creation and improvement of UGSs result in what they term ‘green gentrification’ (Anguelovski et al., 2018). Authors such as Bottero et al. (2022) and Immergluck and Balan (2018) also agree that proximity to UGSs is a reliable predictor of an increase in property prices.

The role of UGS in gentrification is important as it can lead to displacement and a loss of community identity. It is also important to study the effects of gentrification as gentrification can mean that the most vulnerable people in society struggle to access high-quality UGSs. Cole et al. (2019) raise the interesting point that if indeed UGS investments are resulting in green gentrification, it is likely that the benefits of UGSs are not reaching and helping the vulnerable communities that the investments were intended to assist. Thus, these demographics remain at a disadvantage in terms of ecosystem services and other social and cultural benefits. In fact, the study by Cole et al. (2019) finds that UGS benefits were largely found in neighbourhoods that were experiencing gentrification, as opposed to those that were

not. Even within gentrifying neighbourhoods, it was mostly high-income and highly educated residents who were benefiting from UGS benefits. Whilst most of the reviewed studies on gentrification take place in North America and Europe, this concept has also been corroborated by studies in China (Chen et al., 2021).

The often-proposed solution is to find the means and balance to invest in the neighbourhood, but only to the extent that the residents are not priced out of their area. Thus, in terms of urban greenery, we often find the ‘just green enough’ approach whereby investments are implemented with the aim of avoiding gentrification (Curran & Hamilton, 2018). Proponents of this approach often manifest this in proposals for smaller UGSs which are equitably distributed, in place of investments in larger, attractive parks which may characterise a neighbourhood (Curran & Hamilton, 2018). For example, Newman’s (2011) research found that local non-governmental organisations in the communities being studied were recommending that, instead of the rewilding projects that the planners were proposing, small urban gardening be promoted instead. This leads to urban greening whilst also protecting the residents from gentrification.

Nonetheless, findings in other literature offer different perspectives. For example, in their study of green gentrification in ten US cities over a 15-year period, Rigolon and Németh (2020) found that the size of the green space is not related to green gentrification. Instead, the function and location of the UGSs were far more likely to predict green gentrification. Specifically, UGSs which provided opportunities for exercise, movement and active transport such as walking, jogging and riding bicycles, were more likely to result in green gentrification. Meanwhile, Kim and Wu (2022) find that medium-sized UGSs which have a strong natural element are more likely to result in gentrification. With regard to location, UGSs in the business and commercial parts of the city were more likely to trigger green gentrification than UGS investments in the outskirts of the city (Rigolon and Németh, 2020). Industrial locations and older parts of towns and cities are also highly susceptible to green gentrification (Anguelovski et al., 2018). As always, some studies are entirely in contrast to these understandings. The same authors also found that adding UGSs in working-class neighbourhoods with poor-quality housing and which were detached from the city centre did not result in green gentrification. Thus, this may suggest that gentrification may, in some circumstances, also be reliant on other factors, apart from the addition of UGSs, such as the state of the housing in the area (Sax et al., 2022).

Besides solutions related to function and location, Rigolon et al. (2020) propose other solutions. This includes the collaboration of park agencies, leaders and urban planners in ensuring that certain housing areas remain affordable. This is also supported and recommended by other authors such as Anguelovski et al. (2019). Rigolon et al. (2020) also call for the inclusion of locals from the area in the creation of new UGSs or the improvement of existing UGSs. This encourages locals to better participate in the investment process and foster ownership towards these spaces. Moreover, it is encouraged that any staff maintaining these spaces and their managers are employed from within the communities or are reflective of the demographics that live in the adjacent neighbourhoods. Authors such as Wolch et al. (2014) also propose that ‘just green enough’ strategies, based on rigid, formulaic decision-making, may not be enough to protect UGS benefits and instead highlight the importance that the planners engage with the community and allow them to participate in order to identify their needs and preferences.

2.3 Benefits of UGSs

Maintaining and increasing the amount of UGS is recognised by the United Nations (UN) as an essential tool in combating certain social challenges and health problems in urban environments (United Nations [UN], n.d.). UGSs are thus also an important tool in achieving the UN’s 11th Sustainable Development Goal, which aims to “make cities and human settlements inclusive, safe, resilient and sustainable” (UN, n.d.).

In general, studies have found numerous benefits related to both UGS presence in the neighbourhood as well as benefits which accrue as a result of increased duration in UGSs. The presence of UGSs was found in a review of the literature to promote physical health, particularly through the enabling of opportunities for physical activities (Gianfredi et al., 2021). The mere presence of UGSs in neighbourhoods was also found to have a significant positive impact on the mental health of residents (Dadvand & Nieuwenhuijsen, 2019; Feng et al., 2022). A study in the United Kingdom (Sugiyama et al., 2019) and another in Switzerland (Conedera et al., 2015) found that the life satisfaction of elderly residents participating in the study was significantly connected to the availability of high-quality UGS in their neighbourhood. In a study conducted in Barcelona, objective and perceived proximity to greenery and green spaces within one’s neighbourhood were both found to be associated with better perceptions of self-health (Dadvand et al., 2016). In the literature review by Reyes-Riveros et al. (2021), it was found that the number, size and percentage of

vegetation coverage of UGSs all contribute to increased health wellbeing in their neighbourhoods. Thus, the literature indicates that UGSs are important in promoting physical and mental health benefits, as well as neighbourhood and personal satisfaction. These benefits, and the factors impacting them, shall be discussed in further detail.

2.3.1 Physiological health benefits

Twohig-Bennett and Jones's (2018) meta-analysis of studies on the associations between UGS and health benefits found that there are several different physiological health benefits which are obtained from access to UGS. This included improvements in conditions related to blood pressure, heart rate, diabetes, sleep function, strokes, cholesterol and self-reported health. Another meta-analysis also found that residents in neighbourhoods with high amounts of green space have significantly reduced cardiovascular mortality (Gascon et al., 2016). There are also indications that visiting UGSs may benefit attention and impulse control and enable relaxation (Kuo, 2015). Studies have also found links between living in neighbourhoods with UGSs and reduced stress levels, which were even reflected in cortisol bioindicators (Thompson et al., 2012).

Studies show numerous benefits to physical health, with some academics claiming that given their benefits to health, UGSs are the most important open spaces to be found within urban areas (Haase et al., 2021). Meanwhile, some studies criticise the overgeneralisations made by certain literature on this field and urge further investigation of UGS benefits (Hunter et al., 2019; Twohig-Bennett & Jones et al., 2018). This critique is often centred around the nature and methodology of certain UGS benefit studies. Nonetheless, the general consensus appears to indicate various health benefits related to UGS exposure and to visiting UGSs. Given these benefits, many scholars have called on city planners to dedicate more space and resources to the creation and maintenance of UGS. Some scholars have called on green spaces to focus not just on sports facilities and areas for recreation such as picnics, but also on areas in which one can actively walk, contemplate, reflect and enjoy the quiet (Kuo, 2015). Interestingly, elderly people who self-report good health are also more likely to visit UGSs (Enssle & Kabisch, 2020). Conversely, this also means that those who lack mobility and perhaps need UGSs the most may not be able to benefit from it, unless they are assisted in accessing it.

Physical activity

Whilst numerous health benefits are obtained from UGS, the majority of these benefits are shown to be a result of the opportunities offered by UGSs for conducting physical activity (Twohig-Bennett & Jones, 2018; Vich et al., 2021). These opportunities may be particularly essential for the elderly demographic to obtain healthy ageing (Vich et al., 2021). Healthy ageing is defined by the World Health Organisation (WHO) as “the process of developing and maintaining the functional ability that enables wellbeing in older age” (WHO, 2020). One of the means through which healthy ageing can be achieved is increased mobility and physical activity levels (Satariano et al., 2012). Thus, when local UGSs promote physical activity, they are of benefit to the health of the elderly. According to Satariano et al. (2012), visiting UGSs helps to combat sedentary lifestyles, which elderly residents are especially prone to. Physical activity in UGSs can also lead to benefits related to combatting obesity, heart disease, diabetes and depression (Satariano et al., 2012).

Given that the opportunity for physical activity is one of the primary health benefits of UGSs, urban planners need to ensure that planned UGSs are capable of providing such opportunities. There are studies exploring which kind of UGSs are more effective in promoting and allowing for physical activity. Studies have analysed variables such as size, distance and UGS features. Chaudhury et al. (2016) argue that the quality and design of UGSs are of paramount importance, along with the neighbourhood characteristics. Chaudhury et al. (2016) find that most studies show that residents do not appear to make great use of UGSs for physical activity when these UGSs are poorly designed. The usage is also low for UGSs in neighbourhoods which suffer from poor walkability levels, increased fear of crime and other negative neighbourhood contexts. Thus, proximity to UGSs is not the sole important feature, as other factors may impede UGS benefits (Chaudhury et al., 2016). In safe, walkable neighbourhoods, UGSs have been reported to provide a positive effect on physical activity levels (Chaudhury et al., 2016). Elderly residents living in areas with nearby high-quality green spaces were found to experience less of a decline in physical activity as they age than people living in residential areas with a lack of green spaces (Dalton et al., 2016).

With regard to the importance of UGS size for encouraging physical activity, a study by Hooper et al. (2020) found that elderly users of large parks were actually more likely to engage in vigorous and frequent physical activity than elderly residents without access to

large UGSs. However, in the study by Vich et al. (2021) most of the increase in physical activity was attributed to the walks to and from the green space, rather than within the green space, as the time in green space was often spent sitting or socialising. This was also the case in a study by Miralles-Guasch et al. (2019) and Sparling et al. (2015). This could therefore prove the significance of even small, attractive UGSs for physical activity and subsequent health benefits, if only they are able to become attractive points for the elderly. This attraction can be social interaction among elderly residents or simply for resting and enjoying the park's natural and quiet features (Vich et al., 2021). Whilst visits to such parks would improve physical activity during travelling, it must be reasserted that the study by Hooper et al. (2020) did find that larger parks encouraged more physical activity within them than smaller parks.

Whilst we can see many benefits of having access to UGS, Vich et al. (2021) did, however, note that little significant impact was made towards changing the overall sedentary lifestyle of elderly residents. This is because visitation to UGS is only a small part of the day for elderly people, who may have an otherwise sedentary lifestyle. In another study, proximity to parks did encourage increased physical activity for those who were already physically active but did little to improve the physical activity of those who were not already engaged in such activities (Ribeiro et al., 2013). Therefore, one must be careful not to exaggerate the influence of UGSs. Nonetheless, this is still a contribution towards reaching the physical activity levels recommended by the WHO (WHO, 2010). Moreover, in Vich et al. (2021), physical activity levels were higher for elderly residents visiting UGSs than those seen for elderly residents visiting senior centres for exercise. This may therefore highlight the important contributions of UGSs. One must also mention that even if physical activity is not taking place within the green space itself, sitting leisurely and the opportunity to engage in social interactions are also beneficial towards mental health and social cohesion (Vich et al., 2021). The studies described above have shown that neighbourhood characteristics, as well as UGS design, size and proximity, are important in promoting physical activity.

2.3.2 Mental health benefits

UGSs also provide several mental health benefits to the residents. Time spent in UGSs is beneficial to mental health, particularly when the UGS offers opportunities to connect with nature, exercise and engage in recreational activities (Callaghan et al., 2021; Wood et al., 2017). Interestingly, a study by Astell-Burt and Feng (2019) in Australia found that increased

tree canopy was associated with decreased levels of poor mental health, whilst increased levels of grass were actually correlated with poorer mental health. This speaks to the importance of having trees in the UGSs. Studies have also shown that UGSs which have numerous trees are also effective at reducing noise pollution within cities through noise absorption (Gomez-Baggethun et al., 2013). This is a positive feature for the promotion of mental health and restorative activities. Another study in Chicago found that UGSs which included small water bodies were much more effective in producing better mental health results (Ha et al., 2022). It was also noted by the same study that there were better mental health benefits from UGSs which had open spaces between the forested areas in the UGS. This allows one to walk with the views of the landscape and trees. There were also better mental health benefits in the parts of the city which had access to numerous, well-distributed small UGSs, rather than one single large UGS (Ha et al., 2022).

Whilst numerous individual studies provide evidence for the mental health benefits provided by UGSs, there are also a number of broader frameworks and theories which attest to this. The concept of a therapeutic landscape was first introduced by Gesler (1992). This theory argues that particular environments may contribute to the wellbeing of the individual, distinct from medicinal treatments. Gesler (1996) argues that therapeutic landscapes occur “where the physical and built environments, social conditions and human perceptions combine to provide an atmosphere which is conducive to healing” (p.96). Thus, this framework links place and health (Williams, 1992). Moreover, it also establishes that such spaces can also contribute to the maintenance of health, rather than just recovery (Williams, 1992). Therapeutic landscapes can potentially include ordinary spaces such as the home, public squares and rural areas as well as blue spaces (Foley & Kistemann, 2015; Smyth, 2005). UGSs in particular have been considered as therapeutic spaces by various studies (Plane & Klodawasky, 2013). Such spaces offer physical, mental and social wellbeing benefits (Bell, 2018). Interestingly, a number of studies also found spiritual healing as a potential benefit of such spaces (Maddrell & Scriven, 2016). Cultural benefits are also particularly evident when such spaces incorporate the arts (Bell, 2018). Elderly individuals also benefit particularly from links to the past and a sense of nostalgia offered by such spaces and through the arts (Bell, 2018).

Similarly, other theories also highlight the restorative qualities of natural elements. The Attention Restoration Theory suggests that natural elements can restore attentiveness and

cognitive focus (Kaplan & Kaplan, 1989). This theory, therefore, suggests that natural elements within urban areas can be a potential solution to the stresses and negative psychological impacts of a busy urban lifestyle (Kaplan & Berman, 2010). According to this theory, UGSs may provide individuals with the opportunity to detach from the urban environment, experience more open spaces, engage in restorative activities and experience natural stimuli (Kaplan, 1995).

Whilst most of the literature focuses on the benefits of green spaces in the urban context, it is also interesting to note that a study by Beyer et al. (2014) in the United States found that even in rural neighbourhoods, green space is also associated with an increase in mental health benefits for the community. Whilst the research by Collins et al. (2020) also found mental health benefits derived from UGSs, it did identify certain gaps in the literature. Namely, UGS size and quantity were usually considered in mental health benefit studies, but UGS quality was often ignored. They also noted that most of these studies were limited to Europe and the USA. Naturally, although access to UGS is clearly beneficial to mental wellbeing, it is in no way a replacement for therapy or prescribed medication (Astell-Burt et al., 2022). Another psychological benefit offered by ecosystems is cultural services (Rall et al., 2017). “Cultural services are the non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences” (Hassan et al., 2005, p.29). Rall et al. (2017) found that these cultural ecosystem services (CES) are stronger and more often present at the UGSs towards the denser inner areas of cities rather than the outer areas.

2.3.3 Social wellbeing benefits

Whilst much has been written about the importance of achieving environmental sustainability, Vallance et al. (2011) highlight the increasing need of also ensuring that ‘social sustainability’ is reached. Social sustainability entails the preservation of community norms and health in the face of social and economic development (Vallance et al., 2011). Thus, such sustainability preserves and promotes the creation of social capital within communities. Social capital is a form of capital formed through social connections which allow its recipients to access resources and benefits to their social wellbeing (Bourdieu, 1986). For elderly people, UGSs are essential in achieving social sustainability and providing social capital. According to Jennings and Bamkole (2019), these spaces enable the formation of close social ties and allow elderly people to form support networks. They also allow for the

development of attachments to people and places and foster a sense of belonging and community.

UGSs also provide elderly people with a sense of purpose and value within their community (Jennings & Bamkole, 2019). Garvin et al. (2013) categorise such spaces as ‘third spaces’ or ‘bumping places’ where spontaneous meetings and interactions may take place. This is an especially important benefit for the elderly, particularly those with a limited level of mobility, as this age group is particularly vulnerable to isolation and loneliness (Xu et al., 2022). Other social wellbeing benefits include that neighbourhoods with higher levels of UGS and with higher quality UGSs often also hold higher levels of neighbourhood satisfaction (Zhang et al., 2017). UGSs are also important for elderly adults because they act as “places of ageing” where the wellbeing of adults is secured as they grow old with access to such places (Gardner, 2011, p.2). Whilst UGSs allow for social interactions and increase social cohesion, these benefits may still be difficult to obtain for some elderly residents who experience isolation. This is since research also shows that parks are often used by those who already have good social networks and ties, and that those who do not have such relationships may struggle to visit UGS (Enssle & Kabisch, 2020).

In their review of the literature, Clarke et al. (2023) and Wan et al. (2021) find that the ability of UGSs to foster social cohesion in their communities is largely based on the physical characteristics of the UGSs themselves through a knock-on effect. This is since physical characteristics influence the user’s perception of the space. If an UGS provides the features and facilities required by the various groups in the community and provides opportunities for benefits, it will gain a positive perception from that community. Benefits can include ecosystem services, but also social and restorative benefits. It will thus generate usage and activity. This can be in the form of exercises, active transport, community gardening and socialisation. This shared activity, in turn, leads to social cohesion. In Gardner’s study (2011), participants also highlighted the importance of providing a space for socialising and even simply creating an engaging environment where elderly people can simply be observant of their surrounding environment, e.g. children playing in a park. This is substantiated by other studies, which point to the role of UGS design in providing opportunities for socialising and contributing to the social cohesion of a community, even amongst different ethnicities (Loukaitou-Sideris et al., 2016; Peters et al., 2010). On the other hand, criminal activities, antisocial behaviour, lack of maintenance and lack of accessibility are often barriers to the UGS’s ability to foster social cohesion. Dash and Thilagam (2021) also note the importance

of reduced noise levels, the minimisation of vehicular traffic and the presence of natural features. The reviewed literature is conclusive in that UGSs provide numerous physiological and psychological benefits as well as benefits relating to the social wellbeing of individuals. These are summarised in the illustration below (See Figure 4).

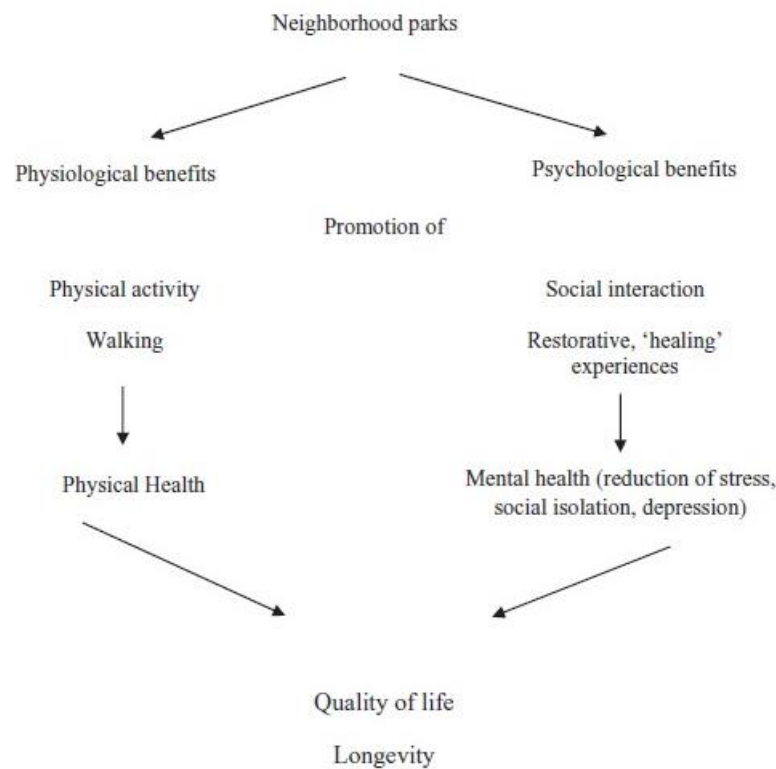


Figure 4: *Summary of benefits of urban green spaces (UGSs).* Reproduced from Loukaitou-Sideris et al. (2016).

2.4 Access to UGSs as an important social and environmental justice issue.

Given the numerous benefits that UGSs provide to communities, access to them is frequently taken to be an indicator of social and environmental justice (Jenning et al., 2012; Wu et al., 2018). Accessible and safe UGSs help to promote social justice as they allow access to all residents, regardless of income, age, ethnicity or gender (Wang, Han, & Mei, 2022). Academic literature focused on environmental justice for ethnic groups, particularly during the 1980s, in the United States of America (Rigolon, 2016). However, since then, studies on environmental justice have increasingly been extended to include the study of the availability of UGS. These studies have also involved other groups, such as lower-income neighbourhoods, and have also expanded beyond the United States, with the study of the

availability of UGS being termed as ‘equity mapping’ (Rigolon, 2016, p.161). In Malta, studies have also found issues related to environmental justice. A local study by Portelli et al. in 2020 explored environmental justice with regard to various environmental aspects across different localities in Malta. Most relevant to this dissertation, Portelli’s study found that the town of Attard achieved better environmental justice scores than Marsa and Qormi. This may highlight the need to investigate environmental services in these localities, including the provision of UGSs. This section explores the international literature on environmental justice, with regard to UGS.

Several academics, studying various localities in their respective research, conclude that lower-income neighbourhoods have relatively less access to UGS (Leslie et al., 2010; Rigolon & Németh, 2018; Wu et al., 2018). Streets are also generally less walkable in lower-income neighbourhoods (Satariano et al., 2012). In its review, the National Recreation and Park Association (2011) found that inequalities exist in the United States for access and distribution of UGSs across neighbourhoods with minorities or lower-income groups. Similar conclusions are found across other developed countries where authors such as Rigolon (2016) conducted a review of the academic literature on access to UGS in lower-income neighbourhoods. Across most studies included in Rigolon’s review, low-income neighbourhoods had smaller-sized and poorer-quality UGSs, including poorer maintenance and safety levels. This is also corroborated by Leslie et al. (2010), who found that residents living in high-income neighbourhoods not only had better access to UGSs than residents living in poorer neighbourhoods but also reported higher levels of neighbourhood and traffic safety, as well as higher levels of upkeep and aesthetic beauty in their UGSs. They also reported higher benefits in terms of socialisation opportunities (Leslie et al., 2010). People living in low-income neighbourhoods are also more likely to feel unsafe in their UGS (Lo & Jim, 2012).

Environmental injustice can also translate into biodiversity and the greenness of the UGS. In a study in the United States, UGSs in low-income neighbourhoods were found to have less mixed vegetation and trees (Nesbitt et al., 2019). This inequality extends even to smaller forms of UGS, such as the presence of trees in streets. A number of studies found the presence of trees to be less prevalent in low-income neighbourhoods (McDonald et al., 2021; Pham et al., 2017). However, Pham et al. (2017) also found that street characteristics were a more reliable determinant of street tree cover than the socio-economic status of the neighbourhood. According to the study, one finds increased tree coverage for streets which

are longer, wider and have duplexes and triplexes. Thus, it may be the case that in the larger roads of lower-income neighbourhoods, one can still find a high level of tree cover.

People living in lower-income neighbourhoods not only have fewer and fewer green UGSs as well as poorer access to them, but they are also less able to access private facilities for exercise and health benefits (Onose et al., 2020). This is because high fees may be a considerable barrier to obtaining such benefits. Residents in poorer neighbourhoods are more likely to want UGSs to facilitate sports and physical activities, as the people living in these neighbourhoods have a more limited opportunity to engage in such activities beyond public spaces (Lo & Jim, 2012). The same study found that the lack of sports facilities was identified as the main issue which was lacking in UGSs in lower-income neighbourhoods. The environmental and social injustices caused by the inequitable distribution and access to UGSs are especially concerning when considering that the impact of UGS access on perceived health levels is even stronger in lower-income neighbourhoods (Rigolon et al., 2021). Low-income neighbourhoods are likely to be in greater need of UGS health benefits given that the literature finds that such residents often have poorer health when compared to other income groups (Chapparo et al., 2018; Satariano et al., 2012). With regard to mental wellbeing, Mitchell et al. (2015) found that inequality between high and low-income areas with regard to mental wellbeing status was reduced by 40% in neighbourhoods where residents in both neighbourhoods reported adequate access to UGS. This narrowing of the inequality in mental wellbeing was not registered when other variables such as access to cultural services (cinemas, theatre, etc.) and functional services (banks, post office) were tested. This highlights the importance of UGSs.

There is also a gender element to injustice in accessing UGSs. Perceptions of safety impacted levels of walking among elderly adults of all genders, in a study in Belgium (Van Cauwenberg et al., 2012). Women have less access to UGSs and thus, to UGS benefits, with one main cause being poorer perceptions by women of their personal safety in such spaces (Basu & Nagendra, 2021; Chaudhury et al., 2016). This is also confirmed in other studies where women feel more prone to violence and sexual assault in certain green spaces due to the nature of these spaces, that is, limited visibility due to vegetation and a limited, predictable walking path available to the victim (Lo & Jim, 2012). Whilst males may also experience such crimes, the decreased perception of lack of safety allows men to have more access to UGSs. The general pattern portrayed by the academic literature is clear in that various forms of UGS are often less accessible in lower-income neighbourhoods and to

females. We also find that these are of poorer quality and are present in less safe neighbourhoods. Nonetheless, one must also appreciate that the distribution patterns of UGS are often also impacted by local contexts (Nesbitt et al., 2019).

2.4.1 Procedural and interactional elements of environmental justice

In his book, Agyeman (2013) argues that there are three aspects to environmental justice, these being distributional justice, procedural justice and recognition. Distributional justice relates to ensuring that polluting and unappealing facilities are not burdened and concentrated in a discriminated area, and that sites and infrastructure which provide ecosystem services are equitably distributed across neighbourhoods, regardless of the socio-economic or ethnic composition of the community. This aspect has already been reviewed. Procedural justice is an integral part of environmental justice, as it allows for the involvement and participation of people from lower socio-economic statuses, minorities and marginalised people in the decision-making process. Finally, recognition, the third component of environmental justice, involves the careful consideration of the needs and preferences of the various demographic groups within the community. In a study by Enssle and Kabisch (2020), recognition is termed as interactional justice. Enssle and Kabisch's (2020) conceptualisation of environmental justice is heavily based on that of Agyeman (2013), but it is more oriented towards elderly people and UGSs. This conceptualisation is illustrated below in Figure 5.

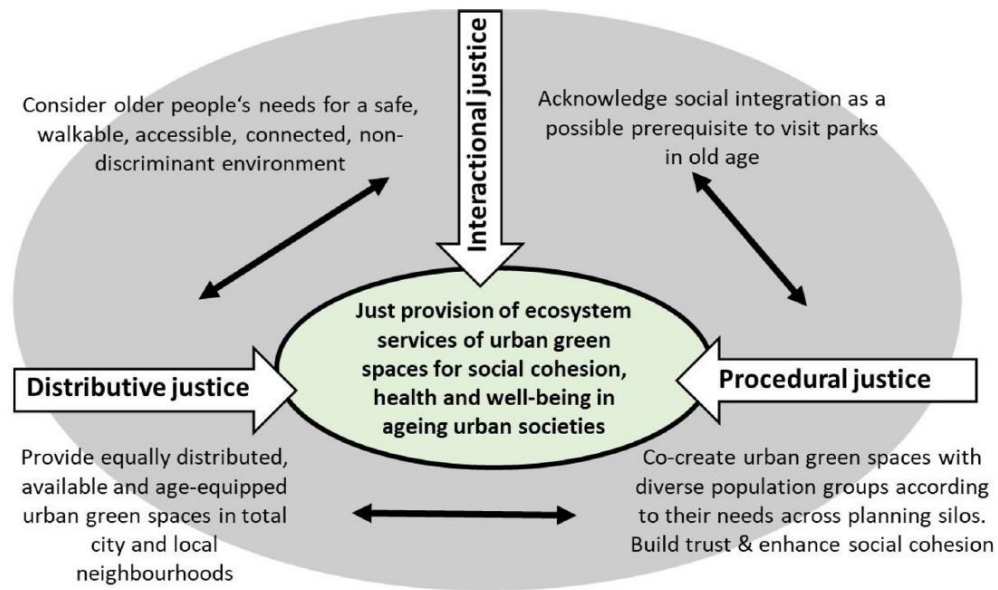


Figure 5: *Three components of environmental justice related to elderly residents and urban green spaces (UGSs).* Reproduced from Enssle and Kabisch (2020).

Haaland and Van Den Bosch (2015) argue for the importance of involving residents in the planning process so that designs and plans may take into consideration the needs of the residents. However, residents of low-income neighbourhoods (Lo & Jim, 2012) and seniors (Yung et al., 2017) are two demographics which are frequently excluded from the design and planning of UGSs. This results in the UGSs not suiting their needs and preferences, and thus potentially excluding them from the space. A study found that most of the elderly residents participating in the study did not even expect to be asked for their opinions and input in the design and planning of proposed parks (Yung et al., 2017). This lack of expectation is reflective of the normalisation of the lack of communication with residents and their lack of inclusion in the design of their cities (Yung et al., 2017).

The input of seniors in such decisions is often based upon the community's perception and esteem of the value of its elderly residents (WHO, 2007). This same report by the WHO highlights that this esteem is often based on cultural factors. Thus, whilst in certain cultures, elderly residents are still found to occupy leadership roles, this is often not the case in other cultures. In fact, the WHO's report finds that elderly people are often stripped of their roles as community leaders and that they often perceive a reluctance on the part of the younger generation to heed their advice and to include them in the community's decision-making process (WHO, 2007). In some instances, this extended even to decisions made by the community on matters directly related to the welfare of the elderly demographic. Meanwhile,

according to the same report, this lack of involvement not only has an impact on the suitability of the decisions to the needs and wishes of the elderly residents, but it also has a significant impact on their esteem and value by the community, which in turn impacts their self-perception (WHO, 2007).

In local studies, it appears that engagement with the public is also limited with regard to public space projects. In one local study, Mizzi (2021) focused on the potential benefits and barriers to the establishment of community gardens. In this study, participants often felt excluded from both the planning and design processes when it came to public spaces. This also seems to be the case in the local study of Ramesar (2021), who argued that such participation is a right, fundamental to the success of the UGSs. Ramesar argues that the role should not be limited to reactive contributions in the form of consultation, feedback, and criticisms, but rather that the role should be proactive and involve the perceptions of residents from the inception of the project. This will provide numerous advantages, including the increased possibility of the space serving the needs of the community, as well as community members developing a sense of ownership over the space. This heightens the interactions and benefits derived from the space and also contributes to its sustained maintenance.

The WHO (2007) recommends several ways to achieve better involvement, including community actions and activities, involving elderly residents in the decision-making process, promoting efforts at recognising the role and contribution of elderly residents and creating spaces where interactions can take place. This is also recommended in more recent international studies, such as that of Suomalainen et al. (2022). This study emphasised the importance of allowing residents to be more involved in the planning and design of UGSs, as this promotes a sense of ownership and makes residents more likely to use such a space. Dedicated individuals in the community can also be involved in regular upkeep and maintenance of UGSs, including repairs and gardening. Technology also facilitates the involvement of the elderly demographic in the planning and design process. Emerging technologies and software are producing exciting new ways in which this consultation can take place. For example, two academics in Germany argue that involvement through questionnaires at the initial, rather abstract stages of the planning is not enough to involve the elderly demographic truly and to cater for their needs (Götzelmann & Kreimeier, 2020). Instead, they propose using modern virtual reality tools and software to provide the elderly participants with a three-dimensional, immersive rendering of the proposed spaces. Elderly

people would be able to navigate virtually through the space and point out strengths and weaknesses of the proposals, whilst also providing suggestions for improvement. Thus, there are several methods through which procedural and interactional justice can be achieved.

2.5 UGS provision and barriers

Given the numerous benefits provided by UGSs, it is evident that UGS provision cannot be neglected or overlooked by urban planners. Nonetheless, the provision of UGSs to neighbourhoods and localities is not simply a matter of the number of spaces, area or even proximity. There are, in fact, numerous barriers which, if overlooked, can negate the potential benefits of UGSs to the residents or make such benefits inaccessible. This section will review the literature on UGS provision and potential barriers to UGS provision.

There are numerous studies on UGS provision. However, a great number of these are case studies concerning accessibility. Whilst these are valuable, they are often localised and may not always be applicable or comparable to the local situation. It is therefore also important that theoretical models are consulted. Thus, certain seminal works which conceptualise UGS provision on a theoretical level are fundamental to a literature review. Biernacka and Kronenberg's (2018) study is one such seminal work. The authors of the study propose that provision of and conversely, barriers to UGS provision, are centred upon three main levels, these being availability, accessibility and attractiveness (See Figure. 6). Availability of UGS is a straightforward concept, with availability essentially consisting of the existence of UGS (Kronenburg, 2015). Meanwhile, accessibility and attractiveness are more nuanced.

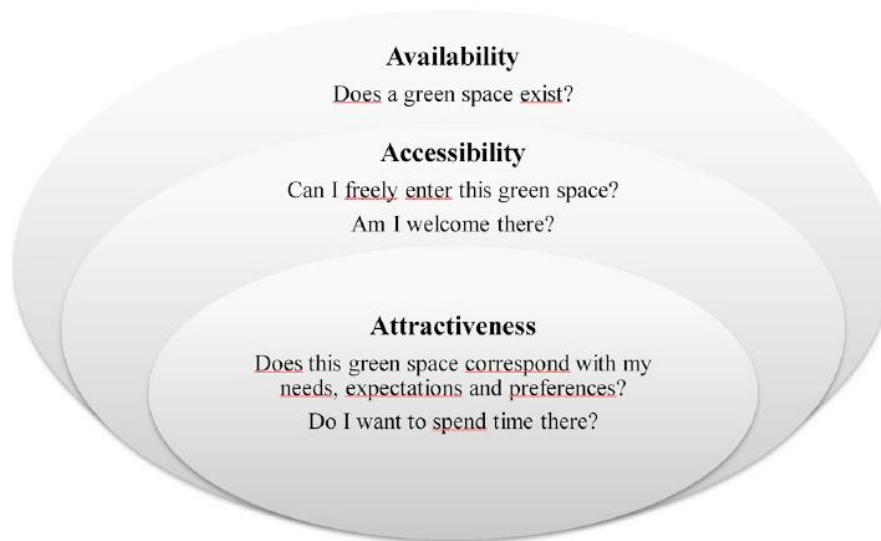


Figure 6: *Biernacka and Kronenberg's concept of urban green space (UGS) provision.* Reproduced from Biernacka and Kronenberg (2018).

2.5.1 Urban green space availability

Naturally, the availability of UGSs is fundamental to UGS provision. Nonetheless, Biernacka and Kronenberg (2018) identified several factors that can be a detriment to UGS availability. This includes the absence of zoning plans, which necessitate UGSs, and the absence of policies which provide them with formal protection. This includes protection from the threat of development, such as buildings and roads, as well as encroachment. Park (2017) also identifies the densification of cities, and the resulting lack of available space, as well as limited budgets, as problems limiting the availability of UGSs. Boulton et al. (2018) argue that apart from budget limitations, there may also be limitations stemming from a lack of expertise and understanding of the needs of the community by the governing bodies. Findings in other academic studies show that the lack of availability can be the result of discrimination in planning and funding for UGSs based on the neighbourhood's social status or on the basis of the community's racial composition (Rigolon & Németh, 2018). In their study of UGS distribution across European cities, Picard and Tran (2021) found that UGSs are less commonly found in the urban centres and more commonly found towards the suburbs and periphery of cities, owing to differences in land availability and value.

To most academics, availability also has a proximity element attached. For example, Heckert (2013) uses proximity and the area of UGSs as measures of UGS availability. Gidlow and Ellis (2011) emphasise the importance of UGS availability at a very proximate distance to

residents, which they describe as ‘doorstep green spaces’. In Gidlow and Ellis’s (2011) study, proximity is assumed to be a likely influencer on access to the UGS benefits. Dennis et al. (2020) further argue that this factor is especially important for the accessibility of less mobile groups, such as the elderly. In fact, elderly users make more use of UGSs which are in their immediate neighbourhood and may thus be unable to access UGSs which are far away (Chaudhury et al., 2016). The WHO recommends that residents should all have available UGS of at least 20,000m² within 300 metres or five minutes of walking distance (WHO, 2016). These sources thus place an emphasis not only on the importance of availability but also on their equitable distribution across the urban space. Other academics consider UGS availability by taking a per capita approach, thus considering how much UGS is available per capita (Kabisch et al., 2016). Academics such as Schindler et al. (2022) and Park (2017) criticise the notion that the proximity of UGS will result in UGS availability for the residents. The findings of such studies show that proximity and the size of UGS are only components of UGS provision.

2.5.2 UGS accessibility

Physical barriers to UGS access

The importance of accessibility is now a well-recognised factor in UGS provision (Stessens et al., 2016). Barber et al. (2021) identified three categories of barriers affecting accessibility to UGS: outside barriers, boundary barriers, and inside barriers. Outside barriers are linear or spatial structures beyond the UGS which are hindering access, such as busy transport routes, water bodies, and construction sites. Lack of features supporting active transport, such as pedestrian crossings, bicycle lanes and insufficient public transport links, are also considered outside barriers. Boundary barriers involve hindrances along the UGS perimeter, including fences, walls and challenging terrain. Formal entrances, their location, distribution, opening hours, fees and restricted access (e.g., private club membership) are also boundary barriers. Inside barriers encompass features within the UGS that impede access, such as inadequate infrastructure for limited mobility individuals (benches, ramps), lack of lighting, perceived safety concerns, and the quality of green infrastructure affecting the microclimate within the green space.

Regarding accessibility, Biernacka and Kronenberg (2018) use a different categorisation of barriers and propose that there are both physical barriers and psychological barriers. Academics provide numerous examples of physical barriers (Biernacka & Kronenberg,

2018; Miralles-Guasch et al., 2019). These are barriers similar to those identified by Barber et al. (2021). These include busy roads surrounding UGSs, UGS perimeters which are fenced or walled and limited entry points located at a considerable distance (Biernacka & Kronenberg, 2018). This is compounded when accessibility facilitators, such as pedestrian crossings, are not close to the entrances. Poorly maintained surfaces, high entrance fees and unfavourable opening hours are also examples of physical barriers identified by these academics (Miralles-Guasch et al., 2019).

Mental barriers to UGS access

Biernacka and Kronenberg's (2018) second category of barriers is psychological barriers. The reviewed literature demonstrates the extent to which mental barriers play a role in access to and use of UGSs. Terefe and Hou (2024) argue that visitation to UGSs may be far more dependent on the perceptions regarding accessibility, rather than the actual accessibility of UGSs. Psychological barriers include fear of crime around the area of the UGS, which may often prevent people, especially vulnerable groups such as the elderly, from visiting UGSs (Park, 2017). Several studies show that perceptions of a lack of safety in UGSs result in the majority of residents not accessing them and thus not gaining any benefit from them. Another example highlighting the importance of psychological barriers can be found in the study of Haase et al. (2021). In this study, the researchers found that residents underused a large urban green space within their neighbourhood, which was of good quality and with relatively good levels of attractiveness and accessibility (Haase et al., 2021). This was largely due to mental barriers. The authors emphasise that residents' negative perception of their neighbourhood played a significant role. The poor levels of attachment that residents had for their neighbourhood and the limited extent to which they perceived ownership of it determined the use of the UGS. If residents do not have this attachment, they are likely to choose to visit UGSs in other neighbourhoods (Patterson, 2010). Haase et al. (2021) described the situation as follows: "UGS benefit flows are present but the respondents do not perceive them. The neighbourhood inhabitants reject (the) UGS because it is in the (negatively perceived) neighbourhood" (p. 2).

Park (2017) is also in agreement with this sentiment and argues that psychological barriers may include negative perceptions with regard to the distances to the UGS, negative perceptions about the state of the UGS, as well as negative perceptions concerning the neighbourhood. An equally important factor identified by these authors is personal traits,

which may themselves impact perceptions (Park, 2017; Terefe & Hou, 2024). Park (2017) highlights the importance of individual characteristics in influencing these psychological barriers and includes factors related to the social and economic status of the individual as well as visitor perceptions of their own personal health, motivation, and so on. In self-reported health studies, participants are asked to rate their health. Whilst this has the flaw of being subjective, studies show that self-reported health is often an accurate indicator of the actual, objective health of the individual (Baćak & Ólafsdóttir, 2017). The literature shows that people who consider themselves to be healthy are more likely to visit UGSs (Enssle & Kabisch, 2020) as they have fewer concerns for their safety (Tan et al., 2019). Tan et al. (2019) showed that self-reported health is an even more important factor in determining safety perceptions among UGS elderly users who live alone.

Social barriers to UGS access

Studies from academics such as Seaman et al. (2010) have demonstrated how even factors such as a lack of social cohesion and trust can be a barrier to accessing green spaces. As has been mentioned previously, elderly residents who are better connected to their communities and their neighbours are more likely to visit UGSs, as they are more likely to obtain socialisation benefits from them (Enssle & Kabisch, 2020). Thus, those who are more isolated may be less likely to visit such spaces. Studies such as that of Noël et al. (2021) identified three social barriers to UGS access. The first barrier is related to safety perceptions. This is similar to the psychological barriers identified previously. These safety perceptions can include real threats and dangers present within or around the UGSs or may arise from past trauma and experiences.

The second social barrier identified by Noël et al. (2021) is less related to feelings of safety and more as a result of being uncomfortable due to the presence of other groups. This can be due to perceptions of great differences between the individual and the dominant groups that use the space. These differences can relate to age, gender, ethnic or national identity as well as behaviour and culture amongst others. This barrier may be dependent on the perceptions of the potential UGS visitor. A third and final social barrier identified by Noël et al. (2021) arises when the UGS does not offer any benefit at all related to social fulfilment. This largely occurs when the visitor feels that he/she does not gain the benefit of interacting with others by visiting the UGSs. This can occur when spaces are empty or when the participant does not feel they can interact with others. Whilst we see a number of potential barriers in the

literature, in reality, there can often be a number of these barriers present at the same time and hindering access to the same UGS. Therefore, an UGS can be said to experience ‘multi-layered barriers’ (Barber et al., 2021 p.2).

2.5.3 UGS attractiveness

Biernacka and Kronenberg’s (2018) final component for UGS provision is attractiveness and their ability to provide a full range of services to their community. As explained, the ability of UGSs to attract residents is essential in encouraging visitation and providing benefits. Anaqami and Santosa (2021) and Biernacka and Kronenberg (2018) provide numerous examples of what makes UGSs attractive or unattractive. Attractiveness is highly dependent on the quality of the UGS’s infrastructure. Poor quality of infrastructure, such as footpaths, lighting and facilities, can be a huge barrier to creating an attractive UGS and therefore, impacts UGS provision for the community. Likewise, poor quality equipment, such as outdoor gyms, can also have a significant impact. Large proportions of the UGS being surfaced by concrete also serve to make it less attractive. Small UGSs have also been identified as less attractive. Conversely, the presence of trees and blue spaces is also an important element in creating an attractive UGS (Biernacka & Kronenberg, 2018). Biernacka and Kronenberg (2018) also identify noise and air pollution as significant barriers to UGS attractiveness. Excessive use of UGS for festivals, concerts and so on, can also decrease their overall attractiveness (Biernacka & Kronenberg, 2018).

It is therefore important that urban planners consider these suggestions. The importance of UGS attractiveness is argued particularly well by Boulton et al. (2018), whose study shows that most UGSs are planned to provide recreational services but lack the capacity to satisfy a multitude of other services. Schindler et al. (2022) also downplay the effectiveness of low-quality UGSs. In fact, Schindler et al. (2022) and Sugiyama et al. (2010) found that people would rather travel much further in order to reach higher-quality UGSs. It is important to note, however, that UGS attractiveness and quality are highly subjective and that many residents may hold different opinions as to what makes an urban green space attractive. One can expect to find these differences amongst individuals but also among demographic groups. Nonetheless, it is clear that creating attractive spaces is crucial. Sugiyama et al. (2010) highlight green space attractiveness as the most important factor in UGS visitation. Thus, they suggest that opening new UGSs will be ineffective unless attractiveness is a central component.

2.6 Needs and preferences of elderly users

2.6.1 Needs and preferences based on age

This section of the literature review is focused particularly on the needs and preferences of the elderly with regard to UGSs. Macháč et al. (2022) highlight the importance of planning for a variety of UGS users in terms of demographics. Elderly residents may often have several specific needs and preferences which have not always been regarded by UGS designers and city planners (Younes et al., 2024). Indeed, even at an academic level, an important shortcoming of several studies on elderly perceptions of UGSs is that most of the participants are those individuals who happen to be using the UGSs. This excludes participants who are not using UGSs or are, in fact, unable to use the existing UGSs (Loukaitou-Sideris et al., 2016). The literature also often does not distinguish between the various differences present within the elderly population. Such differences include ethnic, health and economic status as well as differences related to geography (Loukaitou-Sideris et al., 2016). The literature on designing age-friendly parks is also lacking in contrast to age-friendly residences (Loukaitou-Sideris et al., 2016). Nonetheless, there are a number of studies which shed light on the requirements and preferences of elderly users.

As the literature review has already outlined, UGS attractiveness is dependent on both the characteristics of the individual visitor and the characteristics of the UGS (Loukaitou-Sideris et al., 2016). Kemperman and Timmermans (2006) categorised elderly UGS visitors into four different categories based on their activity within a park. According to the academics, some users visit a park to obtain health benefits, whilst other users visit the park for socialisation purposes. A third category of users is mostly passive and does not engage in any particular activity, utilising the space mostly to relax. Meanwhile, the final category is users who do not have a particular preference for any feature or activity. Therefore, UGSs must be attractive to a variety of visitor types in order to serve this demographic. Despite the potential variety in elderly residents, studies have been able to outline the most common needs and preferences of elderly individuals.

2.6.2 Requirements based on perceptions of safety

In a study with elderly residents, Loukaitou-Sideris et al. (2016) found safety as the primary concern of the focus group participants. The participants emphasise the need for deterrents of criminal or antisocial activity, such as security cameras, good lighting, visibility and even

the presence of officers or volunteers. There are numerous other factors which were found to improve perceptions of safety for elderly UGS users, which are often less important to the average user. For example, the presence of flowers was found to improve confidence in perceptions of safety at UGS amongst elderly users (Tan et al., 2019).

2.6.3 Size and proximity

With regard to UGS distance and size, Kemperman and Timmermans (2006) found that elderly green space visitors preferred smaller green spaces which were closer to their place of residence, rather than green spaces which were larger but located further away. In Australia, Chaudhury et al. (2016) found that for 76.5% of elderly participants, most physical activity took place within the immediate neighbourhood, that is, between one and three blocks away from their place of residence. This is similar to the findings of Satariano et al. (2012), which found that almost a third of elderly residents experienced difficulty walking more than three city blocks. In order for elderly residents to have access to UGS, it is therefore important that these are proximate to their homes. Tan et al. (2019) suggest that UGSs are ideally located within a 400m walking distance for elderly adults to have easy access. This has broad implications as to the importance of ensuring equitable distribution of UGS throughout the neighbourhood and may be a further argument for the promotion of small UGSs. Within green spaces themselves, it is ideal that long paths are also avoided (De Oliveira Chuna et al., 2012). Some researchers argue, however, that since smaller UGSs cannot provide all the ecosystem services necessary, it is also important that large UGSs are still available (Jabbar et al., 2022).

An interesting argument is also made about the integration of UGSs into the daily lives and patterns of the elderly. Chaudhury et al. (2016) note that 74.2% of their elderly participants walked for recreational purposes and 49.3% also walked for utilitarian purposes (going to the shops, banks, pharmacies, etc.) respectively. Thus, local city planners must not only recognise that UGSs need to be proximate to the homes of elderly residents. They must also recognise the importance of integrating UGSs with the daily patterns of elderly residents if they are to encourage elderly residents to visit them and thus benefit from their services. This would mean that UGSs are ideally placed in or along areas which the elderly may visit for recreation or for utilitarian needs. Tan et al. (2022) also reiterate the importance for city planners to integrate the distribution of UGSs with places known to be routinely used by elderly individuals. In the local context, this could be seafronts, squares, churches and

chapels, betting shops, local bars and shops, as well as pharmacies, clinics and hospitals. UGSs which are more linear in shape have been recommended in studies such as that of Zhang et al. (2023) due to the fact that these are more likely to promote walking and create green corridors. Conedera et al. (2015) argue that UGSs are not only important as sites which residents can visit but also offer several benefits simply by being visible to residents when they are travelling within their town and neighbourhood. Interestingly, in one study, only 27.7% of the participants found their main source of physical activity at recreation centres (Chaudhury et al., 2016). The rest found their sources of physical activities in more informal activities, including both recreational (walking, visiting UGSs) and utilitarian activities (errands, etc.). Thus, the potential for UGSs to be integrated with these walking activities for the elderly is emphasised.

2.6.4 Neighbourhood walkability

Apart from proximity, neighbourhood walkability is also crucial in tailoring UGSs to the needs of the elderly (Yen et al., 2014). Since the start of the century, the term ‘age-friendly city’ has been popularised and the concept widely researched (Remillard-Boilard et al., 2017). Walkability is important as walking is the most frequently practised and preferred form of physical activity among older adults (Onose et al., 2020). Neighbourhood walkability has been found to encourage walking and levels of physical activity amongst older adults in the USA (Li et al., 2023). The impact of the built environment on walking and physical activity levels was found by another study to be greater in older adults than in younger people (Barnett et al., 2017). Van Cauwenberg et al.’s (2016) study also showed that elderly people living in more walkable neighbourhoods were less likely to be overweight and more likely to be in better health. This increases the ability to access green spaces. Such neighbourhoods were also found to lead to reduced car dependence (Sugiyama et al., 2019). Thus, when neighbourhoods become more walkable, UGSs may require fewer parking spaces dedicated to them and are also generally safer with regard to traffic incidents (Sugiyama et al., 2019). It is, in fact, important that the roads surrounding the UGS are not characterised by heavy traffic to the extent that it impedes accessibility or causes danger or distress to the elderly user (Loukaitou-Sideris et al., 2016). The surrounding roads of UGSs can have their traffic levels controlled and modified in order to decrease noise levels and improve safety from traffic (Gozalo et al., 2019). Meanwhile, academics such as Miralles-Guasch et al. (2019) note the importance of having features such as pedestrian crossings on routes leading to UGS to ensure safe accessibility.

The literature has already shown that in numerous instances, neighbourhoods, particularly in low-income areas, have poor walkability levels (Satariano et al., 2012). These authors also argue that most transport-related budgets are often spent on highways, main roads and other infrastructure rather than on making streets more walkable. Satariano et al. (2012) call for increased collaboration between government departments and further collaboration at different administrative levels, namely local, regional and national, in order to ensure walkability across neighbourhoods regardless of income levels. Walkability in Malta has been regarded very poorly in local studies such as those of Muscat (2016) and Galea (2019). These studies found that there are several obstacles and impediments reducing walkability, particularly for the elderly, which was the focus of Galea's study. Canas's (2024) study also found that the walking experiences of local pedestrians were primarily dominated by perceptions of lack of safety, mostly due to lack of or poor infrastructure, as well as exposure to traffic. Muscat (2016) recommended the improvement of safety perceptions but also the prioritisation of pedestrians over vehicular traffic and the improved aesthetics of walking areas, in order to remove the barriers to walking. Whilst walkability is important, Chen and Chang (2015) express the importance of having public transport linking to UGSs and also of having parking spaces available for the elderly. This links to Satariano et al. (2012), whose study found that driving and walking are the two main means of mobility for elderly adults.

Walkability is also an important issue within UGSs themselves, particularly for elderly users. It is important that users feel that the environment is safe to interact with. Thus, care must be taken to ensure that paths are safe, facilities are available, and signage is clearly visible (Loukaitou-Sideris et al., 2016). In the study by Miralles-Guasch et al. (2019) elders were found to display a preference for hard, paved surfaces. It is also important that the material used for pathways is durable and does not break down, forming potholes and uneven surfaces over the years (De Oliveira Chuna et al., 2012). Elderly visitors to green spaces were more likely to engage in walking activities if paths were under shade and provided with benches along the way (Schmidt et al., 2019). Meanwhile, soft surfaces such as grass and soil discourage walking (Miralles-Guasch et al., 2019). Schmidt et al. (2019) find that gravel surfaces are also discouraging as these may be challenging surfaces for a senior to walk across, with many elderly expressing a fear of slipping. In areas with soft surfaces, elderly visitors were more likely to engage in sedentary behaviour rather than walking (Macháč et al., 2022). Nonetheless, studies such as that of Macháč et al. (2022) still find that natural and semi-natural parks were preferred over paved urban gardens by elderly visitors. This

highlights the importance of planning according to the targeted demographic and consultation. As some elderly users may become disoriented and confused, it is recommended by De Oliveira Chuna et al. (2012) that the flooring in sitting areas be in a different colour so that it may be easily identifiable. It is also important that signage and information are clear, at eye level and use graphics and pictures.

2.6.5 Age-friendly features

Elderly visitors are more dependent on the presence of infrastructure and features which make UGSs age-friendly. The absence of such features will likely result in less visitation and poorer perceptions. According to studies, such features include benches, toilets, walkable paths and safety from traffic and bicycles (Onose et al., 2020; Ostoić et al., 2017; Perry et al., 2021). Benches are important as elderly people become less discouraged by the fear of fatigue (Ottoni et al., 2016). They also allow the elderly to cover longer distances as they can stop to rest. Moreover, benches in green spaces can become spaces where elderly green space users meet together spontaneously, contributing to the social capital and cohesion of the elderly user (Ottoni et al., 2016; Schmidt et al., 2019). To stimulate socialisation, benches and sitting spaces must be varied in the way they are placed, such that they can encourage social interaction. It is also important that elderly wheelchair users can easily join such sitting areas (De Oliveira Chuna et al., 2012). Some benches should be placed in the shade whilst others should be exposed to sunshine to give users a choice (De Oliveira Chuna et al., 2012). Elderly visitors also require the presence of facilities such as restrooms (Aspinall et al., 2010). The presence of bins and drinking fountains is also important (De Oliveira Chuna et al., 2012).

Elderly park users place a higher value towards parks which have strong natural elements including trees, grass, flowerbeds, animals and blue spaces (Loukaitou-Sideris et al., 2016). UGSs which have a variety of vegetation species and a variety of vegetation colours are better regarded by visitors in terms of aesthetics (Hao et al., 2024). Elderly visitors were far more likely than other demographic groups to have their perceptions of UGSs impacted by the level and quality of vegetation in the UGS (Qin et al., 2013; Sang et al., 2016). In some studies, older individuals seem less concerned with size and location and more interested in having access to more natural and aesthetically pleasing elements (Palliwooda & Priess, 2021). Natural elements are a significant preference for elderly users, particularly since they

cannot often access the wilderness in parks outside urban settings. Thus, elements including noise levels and air quality are important.

2.6.6 Requirements based on socialisation

One study in China found that for elderly individuals, the most important factor in park usage was social connectivity (Yung et al., 2017). This involved the park's ability to bring together peers and provide an opportunity for elderly people to meet with their friends, make new acquaintances and feel like they belong in the social sphere of the place. Unfortunately, development and migration brought challenges in that in certain neighbourhoods, the resident population changes often, and there is little opportunity for community development (WHO, 2007). This often leads to isolation of families and a lack of interaction between neighbours. Elderly residents may also be impacted by the dramatic way in which neighbourhoods change their physical appearance over decades (WHO, 2007). Thus, in order to encourage elderly residents to use UGSs, policymakers must also invest in creating strong community bonds.

Yung et al. (2017) argue that UGSs can become spaces where elderly residents interact with the younger generation, particularly if the elderly residents feel a sense of belonging and connection with the space. This is because the elderly residents may use the space itself to relate stories about the past to members of the younger generation. This also helps instil a sense of paternalism in the seniors. Nostalgia and connections to place, which formed over a long period of time, play a strong role in the development of positive attitudes towards a space (Yan et al., 2023). Such connections also impact happiness and attachments to the community and neighbourhood (Sun et al., 2020). This means that features and elements which promote longevity and connectedness to nostalgic elements should be preserved (Alshamari, 2022). This can include artwork, landscapes, trees and structures. Such connections can help create a space which allows for connections between groups of different generations.

Ioja et al. (2014) argue that UGSs also play an important role in educating younger generations on biodiversity and the importance and functions of environmental features, whilst also fostering greater connections with nature. This is thus an opportunity for such interactions to take place. Studies have also shown that the creation of community gardens can result in intergenerational interactions and bonds (Jakubec et al., 2021). However, context is important, as other studies yielded different results. Gaikwad and Shinde (2019)

found that most elderly park users preferred green spaces which were not used by children and preferred instead to interact with people who shared their age, gender and social status. This is in contradiction with attempts to make parks as opportune spaces for intragenerational interactions.

Numerous conclusions can be made as to the needs and priorities of elderly residents with regard to UGSs. Wen et al. (2018) summarised the priority of elderly UGS users into four categories, namely the UGS's features, its infrastructure, upkeep and the green space's accessibility. Elderly UGS visitors that have high levels of self-reported health are more likely to prefer engaging, active environments and people, whilst users with poorer levels of self-reported health are more likely to prefer UGS which are quieter and which offer the opportunity to rest in a shaded spot (Tan et al., 2019; Wen et al., 2018). Thus, planners must create a variety of spaces to cater for different needs.

Meanwhile, the findings of Wang, Yung and Sun (2022) similarly show that elderly visitors prioritise mostly a sense of security, lower noise levels and the opportunity to socialise as the three most important factors in determining positive attitudes regarding UGSs. The elderly participants in the study by Aspinall et al. (2010) gave importance to safety from traffic in accessing the green space, an engaging environment within the green space which they could observe and also high-quality upkeep and maintenance of the green space. The study by Loukaitou-Sideris et al. (2016), which has already been mentioned, greatly encompasses most of the writings and findings of other authors with regard to what makes an UGS ideal for elderly users. This is illustrated below in Figure 7.

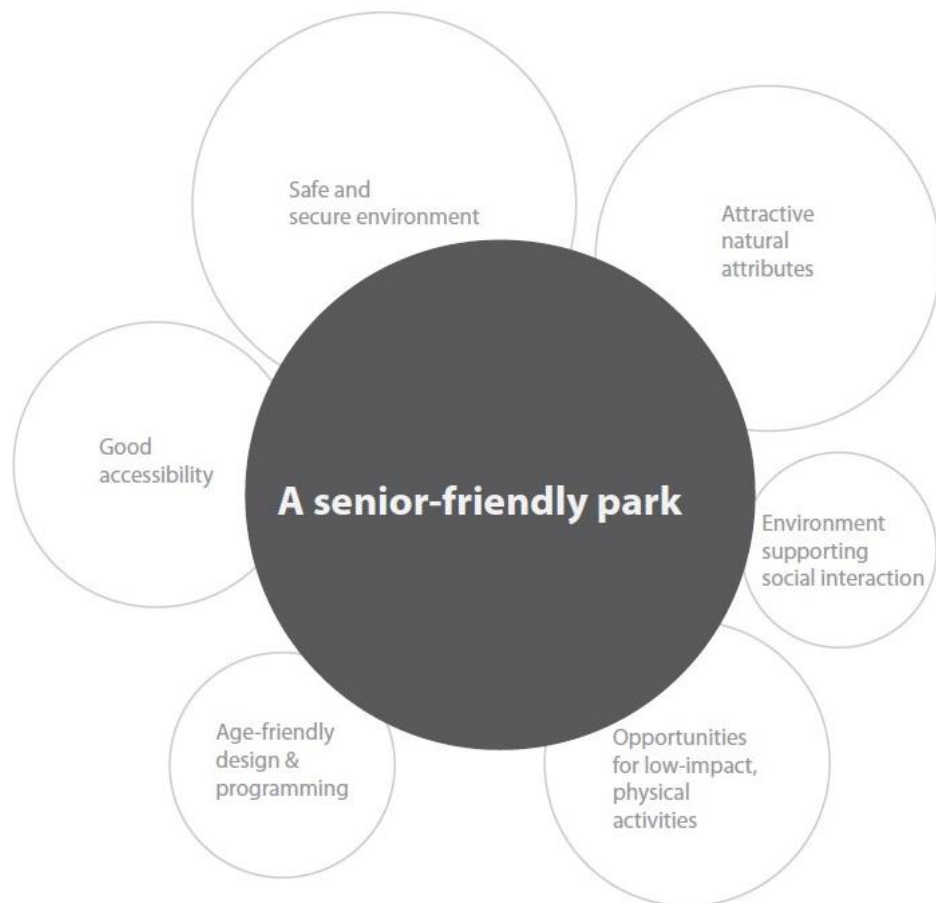


Figure 7: Findings from a seminal study showing elements that elderly residents require for a ‘senior-friendly’ park. Source: Loukaitou-Sideris (2016).

2.6.7 Ensuring climate-resilient UGSs

Given the threats posed by climate change to Mediterranean urban areas, particularly with regard to heat stress, it is very important that UGSs are designed to be resilient to these challenges (Nastos & Saaroni, 2024). This will safeguard not only the ability of the UGSs to provide ecosystem services but will also allow for people to visit and use such spaces. This is especially since older adults are particularly vulnerable to some of the impacts of climate change, including heat stress (Baniassadi et al., 2023).

Studies suggest the importance of the correct choice of vegetation as this impacts the ability of the green space to cool the surrounding environment and shape the microclimate of the green space (Graça et al., 2018). It also impacts the ability to intercept rainfall and prevent flooding (Blanusa & Hadley, 2019). Shade can also be achieved through good infrastructure design, including gazebos and pergolas with benches placed beneath (Shooshtarian et al.,

2018). Blue spaces such as ponds and streams are also effective in mitigating heat stress within UGSs due to the cooling effect caused by evaporation (Gunawardena et al., 2017).

The surface of the UGSs must also be carefully considered given that some surfaces, such as paving and concrete, absorb and radiate heat. In contrast, soil and vegetation absorb less heat and cool themselves through moisture retention and evapotranspiration (Shi et al., 2019). These all contribute to the thermal comfort within UGSs. Other studies also propose using UGSs as rain harvesting zones, contributing to their sustainability as the water can be used for irrigation of vegetation within those spaces (Suleiman et al., 2020). Accessibility must also be prioritised, as this is also impacted by the stresses of climate change. Therefore, the cities must work to mitigate the urban heat island effect and to ensure that there are sufficient public transport links as well as green corridors to UGSs (Litman, 2023).

2.6.8 UGSs in an island context

In the context of islands, particularly Mediterranean islands, UGS design may face challenges which are more unique. This includes challenges related to size, population density, tourism and the influences of climate and the sea. These naturally depend on the specific contexts. The literature shows that many islands, including Corfu and Sicily, are using the creation of UGSs to preserve their heritage, both historical and natural (Andrianou & Papaioannou, 2019; Leonardi, 2023). Thus, these islands are tackling the issue of space limitation by integrating these elements into the UGSs. This includes the preservation of remains and buildings, as well as the establishment of museums. Such green spaces can also become attractions for tourists, schools, and researchers, whilst also providing the community with ecosystem benefits (Andrianou & Papaioannou, 2019). The island of Corfu is perhaps more readily comparable to Malta, given that it is closer to the Maltese islands in size.

A study in Limassol, Cyprus, explored nature-based solutions for densely built and historically significant cities within a Mediterranean island context (Tsiatinis, 2023). The study expressed the need for connected UGS networks, made up of linear UGSs along routes and smaller UGSs. Another study in the Balearic Islands focused on the challenges that gardens and UGSs can pose to freshwater management and resources within a Mediterranean climate context (Hof & Schmitt, 2011). Thus, studies recommend the planting of local species which are not water-intensive and the use of conservative irrigation methods (Andrianou & Papaioannou, 2019). Greywater use for irrigation is also a possible solution

for Mediterranean islands vulnerable to droughts (Andrianou & Papaioannou, 2019). These studies, therefore, contribute important considerations which may be applied locally, given our shared contexts.

2.7 Local context

Academic literature that focuses on the local situation helps to provide some context as to the general situation regarding UGSs and their relationship with Maltese residents. Scheiber and Zucaro (2023) identified several shortcomings concerning local open and green spaces. These authors note that small UGSs tend to be available within a short distance for densely populated areas. However, larger UGS are less available. They note the poor walkability for pedestrians within the open and green spaces. They also note that there are few available green corridors which allow for a network of green spaces, much needed for the flourishing of biodiversity and for encouraging physical activity. This is also pointed out in the study by Pisani (2022). There are also problems concerning the connectivity of the green spaces with the surrounding community, as they are in certain instances isolated from these communities by heavy traffic and imposing buildings. Furthermore, Scheiber and Zucaro (2023) point out that very few of the available green spaces provided users with a sense of refuge from the busy urban landscape and even fewer spaces allowed for some level of connectivity with nature. Thus, the character of the green spaces still feels urban and is unable to provide many of the mental health benefits associated with more natural green spaces. The need for more vegetation and seating is highlighted. The lack of vegetation is a concern as “in 30% of the cases, less than 10% of the area was allocated to vegetation, with a further 30% having 10-30% of the area as vegetation” (Scheiber & Zucaro, 2023 p.341). Schieber and Zucaro note that this has resulted in an unengaging environment, which has a reduced level of benefits normally associated with UGS. This includes less noise reduction and very poor climate mitigation, with the areas often being too hot in summer, and unable to provide shade.

Whilst very little has been written locally about the sentiments of the elderly concerning UGSs, we do find a number of studies investigating the attitudes of the general population towards the urban environment. Various suggestions for urban greening and green infrastructure were met with approval and positive reactions in a local focus group consisting of authorities and various stakeholders (Scheiber, 2022). Particular emphasis was placed on the need for trees in local urban areas, and that residents need to be able to access such spaces within their locality. Interestingly, Scheiber (2022) reports on participants expressing

concerns that UGSs would be excessively formalised, thus diminishing the natural elements of the UGS. Some participants even expressed the wish for urban greenery, in order to serve the needs of nature, rather than those of humans.

In the study by Pisani (2022), local sentiments towards the urban environment were explored, and his findings show that most are dissatisfied, with particular disappointment being expressed at the governmental authorities' failure to bring about sustainable development within the urban areas. However, Pisani (2022) indicates that the locals do value the UGSs, which currently exist, as these are often visited, particularly by the younger and elderly demographics. In particular, Pisani's respondents felt that UGSs and green infrastructure contributed to a better quality of life, to climate change mitigation, and to the beautification of the local area. Concerning quality of life, respondents claimed that this improvement takes place particularly due to reduced air pollution levels, better preservation of water and an enriched biodiversity. Participants in Ostrowska (2023) noted that visiting local UGSs provided restorative benefits, which included detachment, mental rest and the opportunity to connect with nature. Pisani (2022) also noted that educational level is an important factor when it comes to participants identifying the benefits of UGS and green infrastructure. Finally, a core recommendation from the local literature was the need for UGSs and green infrastructure to provide health benefits, to be well-connected to a network and to be consistent in their design in such a way that promotes sustainable mobility and walkability (Scheiber, 2022).

2.7.1 Barriers to local development of UGS

Scheiber (2022) identifies several barriers to the development of UGS and green infrastructure. This includes financial, political and social barriers as well as barriers related to the enforcement and implementation of existing policies. For example, participants in a focus group point out that a lack of maintenance and poor enforcement of monitoring responsibilities lead to poor quality UGSs, amongst other factors. There is often the problem that a space is created and then neglected. With regard to financial costs, the cost of maintaining UGSs may become a burden on the local taxpayer. The costs of constructing underground parking lots to accommodate the parking spaces displaced from potential UGS areas may also incur significant and discouraging costs.

Scheiber (2022) also identifies political barriers, which include a lack of political will from the authorities, particularly when such projects affect the accessibility of cars or the

availability of parking spaces. However, there are also other barriers, such as a lack of enforcement of the policies and visions regarding UGS. Scheiber's (2022) focus group also pointed out problems regarding coordination and collaboration between institutions in their approach. In particular, one barrier is that there was no government body which was technically responsible for the creation of such open spaces. Moreover, when bodies, such as local councils, attempt to make proposals, they often find a lack of support, guidance and expertise as to what the UGS should consist of, its design and its maintenance. Finally, Scheiber's (2022) focus group also identify problems relating to combating a car-dependent culture and a general disconnect in communication between the authorities and the public (Scheiber, 2022).

A study by Mizzi (2021) found that councillors often also find resistance from the residents themselves when it comes to creating new green spaces. This is because they are often concerned with the loss of parking spaces. Participants in Scheiber's (2021) study also felt that this prioritisation of car parking spaces was a major barrier to the establishment of new spaces. Business owners are often also concerned about new UGSs resulting in fewer available parking spaces (Scheiber, 2022). This often leads to concerns with regard to the distance needed to travel in order to get to one's home or, in the case of business owners, the impact that it would have on customers being able to access and visit their shops. Thus, participants in studies often express the need for the removed parking spaces to be added in other, nearby locations (Scheiber, 2022). With regard to the maintenance of existing spaces, Camilleri (2022), in her study of UGSs in Floriana, argues that one-time interventions are not sufficient, but rather require a consistent commitment to the maintenance and upgrading of the UGS. This ties into the concerns found in Scheiber (2021), where the feasibility of maintaining a number of UGS to a satisfactory standard was brought into question.

2.8 UGS quality observation studies

Numerous studies are focused on assessing the quality of UGSs in order to determine better their capacity to provide the numerous benefits which have been highlighted in this literature review. Whilst there are various ways in which these studies have been conducted, one common method is on-site observation of various aspects of the UGSs. A number of observation tools have been developed for this purpose, with the aim of better guiding researchers in their observations of UGSs.

The ‘Environmental Assessment of Public Recreation Spaces’ tool (EAPRS) is a very comprehensive and thorough tool which has been used in studies, particularly those analysing the relationship of UGSs with physical health outcomes (Saelens et al., 2006). The observation tool assesses a vast number of items and requires a great amount of time as part of the observation process (Geremaia et al., 2019). It is therefore more ideal for studies which operate on a longer timescale, or which consist of numerous people to collect data. It is also ideal if the study only intends to assess a few particular UGSs.

Another assessment tool is the ‘Bedimo-Rung Assessment Tool–Direct Observation’ tool (BRAT-DO) (Bedimo-Rung et al., 2006). This assessment tool, however, has the limitation of being largely designed to assess the impacts towards physical wellbeing. Whilst possessing strong reliability scores, it does exclude observations of safety levels, land cover, and so on (Knobel et al., 2019). The ‘Public Open Space Tool’ (POST) is another established observation tool. It is particularly user-friendly and requires less expertise on the part of the data collector (Giles-Corti et al., 2005). However, it is not centred on assessing urban green spaces but rather public open spaces in general (Edwards et al., 2013). This means that certain criteria in its observations may not be entirely compatible with those required for other observation tools. It also lacks depth in comparison with other tools (Knobel et al., 2019).

The ‘RECITAL’ tool is a tool which offers a good balance between the various advantages of all the other tools (Knobel et al., 2021). This is since it is relatively easy for a data collector to use the tool, and it is also relatively easy to modify it according to the needs of one’s study (Knobel et al., 2021). The tool offers a comprehensive framework for the observation of UGSs and is not focused solely on a particular aspect (Knobel et al., 2021). Nonetheless, this thoroughness is also balanced such that the user is not overwhelmed with data and detail. Moreover, the tool considers not only the physical aspects of UGSs but also various social aspects. Certain aspects of the tool, do require some expertise, particularly data relating to biodiversity present within UGSs (Knobel et al., 2021). These tools have been important contributors to the academic literature with regard to assessing the quality and effectiveness of UGSs.

2.9 Conclusion

The literature reviewed above has provided invaluable context upon which this research can be framed and built. This includes understanding with regard to the politics of UGSs,

environmental justice, UGS benefits and also an understanding of theories related to accessibility and barriers. A focus was also made on the needs and preferences of the elderly with regard to UGSs. Whilst specific findings from the international literature may readily be applied to Malta, it is also worth considering that local context may yield different perspectives, priorities, needs and challenges. One primary difference between the local and international situation is that Malta is a small island nation and thus is faced with specific needs and challenges. Amongst these, we find challenges relating to Malta's relatively high population density, its vulnerability to the impacts of climate change, and the heightened value of its available space, fiercely contended by a variety of needs and interests (Camilleri, 2022). The issue of a lack of space, particularly in urban environments, is a challenge which further heightens the importance of well-informed, sustainable planning which considers and involves various stakeholders (Camilleri, 2022).

Chapter 3: Methodology

This chapter describes the methods employed for this research, including the research questions, approach and design, procedures for analysis, ethical procedures, and limitations of the methodology.

3.1 Research aims and objectives

When designing a research methodology, the aims and context of the research should be a central consideration. Thus, the chosen methodologies and all related decisions must be justified in terms of their ability to satisfy the research aims and suitability to the context within which the research is taking place.

The research aims to gain a better understanding of the perceptions of elderly residents in Malta with regard to UGSs in the localities of Attard, Marsa and Qormi. This includes the perceptions of the elderly residents regarding the quality of UGSs in their locality and the ability of those spaces to satisfy their needs and preferences. It also aims to understand the experiences of these elderly residents in using and accessing UGSs. Finally, it aims to identify the potential, or lack of, benefits that the UGSs contribute to the wellbeing of the elderly participating in this study. The research aims were reached by satisfying a number of specific research objectives:

1. To explore the quality of the UGSs in the localities under study, namely Attard, Marsa and Qormi, and to make a comparative analysis between the localities.
2. To understand elderly residents' preferences and usage of urban green spaces.
3. To understand elderly residents' self-perceived benefits from urban green space usage.
4. To understand elderly residents' experiences in accessing urban green spaces and to identify potential barriers to this access.

The study focused on the elderly residents of three localities in Malta: Attard, Marsa and Qormi. The literature, which was reviewed in the previous chapter clearly highlights the importance of UGSs in various aspects, including physical and mental wellbeing, social cohesion and aesthetic value for the neighbourhood, as well as for providing environmental services (Callaghan et al., 2021; Loukaitou-Sideris et al., 2016; Rall et al., 2017; Twohig-

Bennett & Jones, 2018). The literature has clearly shown how important it is to have a network of connected UGSs, and how the availability and accessibility to UGSs are both an environmental and social justice issue (Jenning et al., 2012; Wu et al., 2018). However, the literature also shows that in order to serve their communities, UGSs must also meet a number of criteria, often related to the circumstances and contexts of the particular neighbourhood and the demographics of the community (Biernacka & Kronenberg, 2018; Stressens et al., 2016). Unless such criteria are met, the UGSs may be unable to provide benefits, or even access, for elderly residents, particularly those living in low-income neighbourhoods. Thus, the research hopes to contribute to an improved understanding of the local situation through a study of the situation in Malta. More specifically, it aims to achieve this by analysing the situation in three select localities, namely Attard, Marsa and Qormi.

3.1.1 Study definition of UGS

The literature has aided the author of the current study in formulating a definition for UGSs. For the purposes of this study and given the author's familiarity with the nature of Malta's UGSs, it was determined that, in the local context, very few urban spaces would actually fit a definition of UGSs as areas which are "predominantly" dominated by soft surfaces (Swanwick et al., 2003). The current study adapts the more flexible definitions of UGSs by Baldwin (2020) and Stahle (2010) to suit the local context and the aims of the study. For the purposes of this study, UGSs are defined as urban spaces which are designed to allow public entry and which have dedicated spaces for natural elements such as trees, vegetation and soil. However, the study excludes private UGSs as well as green spaces which are not designed for public entry. This includes roundabouts and green areas with a perimeter which bars entry. This limitation has also been employed in other studies (Knobel et al., 2021). These excluded elements were instead considered to be green infrastructure. Tree rows along the street were also considered as green infrastructure rather than UGSs, as these are not dedicated spaces which one can enter.

3.2 Research questions

After establishing the research aims and objectives, the subsequent step involved formulating appropriate research questions. These questions served as the methodology's guiding framework, delineating the research's scope and direction. A focused and rigorous approach to the study was ensured by aligning the research questions with the overarching objectives.

1. *Are there differences in the quality of UGS provision between the localities under study?*

This research question seeks to understand the nature and quality of UGSs in each of the three localities chosen for the study. The research question seeks to make comparisons between the UGSs available in each locality with respect to a number of criteria, including quantity, size, and particularly to quality, attractiveness and features. The question is essential to contextualising the findings of the rest of the research questions. Thus, it merits serious investigation and must be tackled first.

2. *How do elderly residents perceive and use the UGSs in their locality?*

Understanding the needs and preferences of elderly residents with regard to UGSs is an essential component in the provision of these spaces. The same can be said for an understanding of the way that elderly residents use or wish to use their UGSs.

This research question seeks to help the researcher understand the opinions of the elderly residents about the UGSs in their locality. It attempts to understand the perceptions of the elderly residents as to whether the UGSs were to their liking or not, their opinions on the levels of attractiveness of the UGSs and the main strengths and weaknesses of UGSs in their locality. This will shed light on what works for the elderly residents and what is lacking and needs to be improved. The focus on usage is also an important component of the research question. It helps the researcher understand if elderly residents visit their UGSs and what they do or wish to do inside such spaces. This is valuable information for urban planners as such understandings allow planners to design spaces which are attractive to elderly residents and can provide the numerous benefits identified in the literature. Several studies in the literature have focused on understanding user preferences for these spaces and the activities that UGS users engage in within these spaces. They also focus on participant opinions regarding their desires for improvements and the limitations of available UGSs. The findings for this question could therefore be compared to the relevant literature.

3. *Which benefits do elderly residents perceive themselves to be obtaining from these UGSs?*

The literature has demonstrated numerous benefits of UGSs to both the residents living in its proximity and its visitors. However, the literature also shows that there are variations in the ability of different UGSs to provide these benefits. These variations can

depend on size, design, accessibility, surrounding environment and the visitor, amongst other factors (Enssle & Kabisch, 2020; Gidlow & Ellis, 2011; Twohig-Bennet & Jones, 2018). They are also highly dependent on the various contexts of the locality and the local community. Thus, the research question seeks to address the user's perceived benefits regarding UGSs and to understand how these operate within the context of the locality and the circumstances of the participants. This is an important aspect in gaining an understanding of the effectiveness of the available UGSs in these localities and in providing the various benefits associated with UGSs. The research question also allowed for an understanding of the perceptions and attitudes of the elderly residents regarding the importance and roles of UGSs in their neighbourhood.

4. What are the experiences of elderly residents in accessing UGSs, and what are the potential barriers that elderly residents face in accessing these UGSs?

Access to UGSs is a crucial component of UGS provision and in obtaining UGS benefits. However, particularly in low-income neighbourhoods, accessibility can be an issue for various reasons. Moreover, elderly individuals face larger challenges than the average citizen with regard to mobility and accessibility. Furthermore, in the local context, various challenges are also prevalent, including heavy traffic, poor-quality pavements and exposure to intense heat (Scheiber et al., 2022). Thus, this question sought to understand if UGSs in the localities under study are perceived to be accessible by elderly residents. It also sought to understand which barriers may be withholding this access from the participants, if any.

3.3 Selection of localities under study

It was determined that three different localities should be included as study areas in this research. This decision increases the likelihood that the data collected for this dissertation can better reflect the experiences of the elderly residents. Focusing solely on one locality would have carried the risk of the data exposing only the specific realities of that locality and would not have provided the researcher with the opportunity to make comparisons over different geographies. This approach allows for more comparisons to be made and thus enables the researcher to better satisfy the aims and objectives of this research.

The localities chosen for this study are Attard, Marsa and Qormi, in Malta. The localities have a strong residential character with large areas dedicated purely to housing and private

residences (Azzopardi, 2019; Cardona, 2024; Xerri, 2011). However, Qormi and Marsa are also characterised by industrial elements (Azzopardi, 2019; Cardona, 2024). Qormi's industrial area (Handaq Industrial Estate) is more detached from the main town, whilst that of Marsa is in part relatively closer to its central hub. Marsa's industrial area also has the function of a port. However, over the past decades, Marsa has experienced urban decline and, as a result, social stigma (Azzopardi, 2019). This is due to numerous factors, including the decline in importance of its port industries (Azzopardi, 2019). Whilst regeneration efforts have taken place, these have not been holistic or successful in reviving the significance and value of the area (Azzopard, 2019). Qormi and Attard are both surrounded by a mix of more rural areas, green spaces, nearby dry valleys as well as direct conurbation links with other towns. Meanwhile, Marsa is largely connected to other towns directly via conurbation links and does not have a strong rural element in its vicinity. All three towns have heavy traffic close by which are channelled through bypasses that pass by the towns. Once again, however, the case of Marsa is peculiar as it is very close to the very busy Triq Aldo Moro and the town itself is divided by Triq Diċembru Tlettax, a busy bypass which links the village of Floriana to Triq Aldo Moro and other bypasses.

Numerous considerations were made when choosing these locations for the areas to be included in the study. This included considering the physical location of the localities in relation to their surroundings. The decision also considered factors such as income levels and demographics. After these considerations were made, the three localities were purposely chosen as study areas. With the exception of Marsa, the selected localities are situated inland. Thus, they do not have the direct influence of blue spaces in the form of the coast and the sea. This is significant since literature shows that blue spaces can provide services similar to those offered by green spaces (Ostrowska, 2023). Thus, it was decided to focus on residents who are not influenced by blue spaces so that the effects and importance of green spaces can be better studied. Marsa is the exception. Nonetheless, whilst Marsa is located on the coast, the researcher does not consider that the residents receive too many benefits from this blue space, as it is primarily dominated by industrial activity and is largely inaccessible to the public. Thus, the coast in Marsa cannot be considered a replacement for the green spaces.

The localities were also chosen for their ability to offer contrast with each other. Attard is well known for its abundant green spaces (Studjurban & Studio Tom Van Malderen, 2021), including San Anton Gardens (Il-Ġnien ta' Sant' Anton), one of Malta's largest public gardens. Whilst Qormi and Marsa both have their own UGSs, they are often regarded as

busy and congested areas with relatively few available green spaces (ERA, 2024). Whilst Marsa does have a sports ground and golf course, these are managed by commercial entities and are not open to the public free of charge. Thus, they are different from the UGS being considered in this study. Attard is also considered a locality with higher-income residents compared to Qormi and Marsa (NSO, 2023). Thus, this might also provide interesting results.

The demographics of the localities were also a factor which was considered in choosing these three localities as study areas (See Table 1). Population density was one aspect of demographics which was considered. This is because population density may have impacts on various aspects regarding the significance and functioning of UGSs (Nieuwenhuijsen, 2021; Park, 2017; Rall, 2017). The NSO reports that Attard has an area of 6.64 km² and a population of 3,162 people (NSO, 2023). Thus, it has a population density of 12,268 people/km². Meanwhile, Marsa with an area of 2.76 km² and a population of 5,468 people has a population density of 1,984 people/km². Finally, Qormi has an area of 5.03 km² and a population of 18,099 people. Therefore, its population density is 3,598 people/km². It is important to note that the 'area' used by the NSO for each locality also includes the outskirts of that locality. All three localities are relatively densely populated, given their small area.

	<i>Attard</i>	<i>Marsa</i>	<i>Qormi</i>
<i>Population</i>	Total: 12,268 Male: 6,193 Female: 6,075	Total: 5,468 Male: 3,148 Female: 2,340	Total: 18,099 Male: 9,471 Female: 8,628
<i>Elderly Population (65+)</i>	Total: 2,308 Male: 46.2% (1067) Female: 53.8% (1241)	Total: 1,233 Male: 47.2% (583) Female: 52.8% (650)	Total: 3,703 Male: 45% (1667) Female: 55% (2036)
<i>Percentage of the population which are elderly (65+)</i>	18.8%	22.5%	20.5%
<i>Locality Area</i>	6.64 km ²	2.76 km ²	5.03 km ²
<i>Population density</i>	1,896 people/ km ²	2,022 people/ km ²	3,598 people/ km ²
<i>Percentage of the population which are non-Maltese.</i>	12.9%	28%	15.1%

Table 1: *Descriptive statistics for the localities under study.* Compiled from NSO (2023).

The localities also needed to have a significant population of elderly people living as residents. 2,308 of Attard's residents, 1,233 of Marsa's and 3,703 of Qormi's residents are over 65 years of age (NSO, 2023). This means that 18.8% of Attard's population, 22.5% of Marsa's population and 20.5% of Qormi's population are over 65 years of age. For Attard, the elderly residents are split into 46.2% males (1067) and 53.8% females (1241). For Marsa, we find that the split is at 47.2% males (583) and 52.8% females (650). Meanwhile, for Qormi, the split is at 45% males (1667) and 55% females (2036). Therefore, all three localities have a considerable elderly population.

Finally, it is also worth noting that Marsa has a significantly higher percentage of the population which is non-Maltese (NSO, 2023). Attard and Qormi have a far lower portion

of their populations which is non-Maltese (See Table 1) As the literature has demonstrated, the presence of different ethnic or national groups may impact the social cohesion within the locality and thus the dynamics of UGS usage (Noël et al., 2021; Seaman, 2010). It is therefore an important element within the context of the chosen localities for this study.

The following sections outline the research approach. J. W. Creswell and J. D. Creswell (2018) define research approach as the “plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation” (p. 40). They recommend that the formulation of a research approach should include philosophical worldviews, research design and research methods. The next section will discuss the first component of the research approach – the philosophical worldview.

3.4 Research design

Researchers generally choose between the three broad research designs of quantitative, qualitative and mixed methods approaches. While each approach has its strengths and weaknesses, Creswell (2015) notes that quantitative and qualitative methods should be considered more as a spectrum rather than a dichotomy and that, thus, all studies contain some element of either approach. Naturally, mixed methods reach a more balanced weighting of the two approaches. All three of the research designs were considered for this study. The qualitative design was deemed to be most suitable for this research and the research questions which were set out by this study. Thus, this section will justify the qualitative design’s suitability to the main aims of this research. The advantages and disadvantages of all three designs will be discussed, enabling the researcher to justify his approach fully and for the reader to understand better the research decisions taken.

3.4.1 Quantitative and qualitative approaches

The research has a qualitative design and approach. Generally, qualitative approaches seek to gain an understanding of the participants’ experiences of a phenomenon or problem. The researcher gains information from qualitative observations or from his participants, from which broader themes are identified in an inductive manner in order to produce new theories. Qualitative approaches are known to be less focused on numerical data and more focused on descriptive data (Trochim & Donnelly, 2006). Therefore, qualitative approaches are better suited to the ‘how’ and ‘why’ questions of research (Biggam, 2011). As mentioned previously, the constructivist and transformative worldviews that influence the researcher

and guide this research lend themselves very well to qualitative research design (Mertens, 2015).

On the other hand, quantitative research seeks to obtain numerical data and relies a great deal on statistical analysis (Patten & Newhart, 2018). However, this is not suited to the research aims, as this study is not focused on a hypothesis. The main reason for this is that the issues concerning the relationship between elderly residents and UGS are multifaceted and complex. Thus, it is more advantageous to employ a research design which allows for the exploration of themes and phenomena concerning this issue. In fact, it is often the case that a qualitative study such as this lays the groundwork for a hypothesis to develop, from which a quantitative study can then emerge. Thus, this can be a contribution of the present study.

Quantitative design is very well suited to obtaining information from across a large number of research participants (Flick, 2015; Mujis, 2022). Thus, quantitative design allows for the researcher to gather data from a broad sample, such that it is representative of the broader population. This could potentially allow the researcher to generalise the findings to a broader population. This is a shortcoming of qualitative research. Nonetheless, certain lessons and insights can be taken from qualitative research in order to inform decisions taken on a larger scale (Flick, 2015). Thus, qualitative studies will mostly help the researcher learn about the experiences and circumstances of their participants and not of the broader population. This falls within the scope of this research.

Despite the much smaller sample size, the qualitative design provides the researcher with several advantages which are very suitable to the aims of this study (Patten & Newhart, 2018). Firstly, owing to the small sample size, the divide between researcher and participant can often be narrowed in qualitative research, as there is often face-to-face contact between participant and researcher (Patten & Newhart, 2018). As a result, room is allowed for a level of informality, familiarity and friendliness to develop (Kumar, 2011). One must note that qualitative researchers often make a huge effort to achieve this, including through vigorous studies of the contexts surrounding their participants and through qualitative observations. As a result of this process, the power imbalance between the researcher and the participant is greatly reduced (Kumar, 2011). This is an important benefit for the researcher, considering the importance of creating ethical research that allows the participants to truly voice their perspectives. It is an essential component of the transformative worldview.

This relationship between researcher and participant is also essential to the research to achieve its aims. It offers the researcher access to richness and detail in the data, allowing the researcher to gain a holistic understanding of the participant, his context and the phenomena under study (Trochim & Donnelly, 2006). Furthermore, this is also because the results of the interviews and observations are allowed to emerge in their fullness without the limitations of choices, scales and ratings placed in quantitative surveys (Patten & Newhart, 2018). Thus, a great advantage of qualitative studies is that they allow themes and answers to emerge that were otherwise unanticipated. With quantitative studies, all of the answers are usually preset in a selection of choices that the participant chooses from. In fact, at times, a participant may have to choose a pre-set option which does not truly represent their answer but is simply the closest to it.

Quantitative research also does not allow participants to explain what they mean by their answers, and denies them the opportunity to add the much-needed context and explanations that they might otherwise be able to give in an interview (Flick, 2015). Thus, depth and variety are limited to boost standardisation and efficiency. One might also add that in quantitative research, participants may misinterpret the questions provided to them and may not have the opportunity to voice their queries to the researcher and thus give misguided responses (Kumar, 2011). This is more likely, particularly when the researcher's participants are from different demographics, genders or cultural backgrounds. The qualitative approach also has the advantage of recognising and giving weight to differences in participant beliefs, values and perceptions and the various contexts that shape these responses (Maxwell, 2012). The qualitative design was, therefore, much more suited to this study.

The researcher has also considered that the qualitative approach offers numerous challenges that need to be overcome. One disadvantage of qualitative studies is that they are often very time-consuming. Interviews and observations can take a very long time to plan and execute. It is also time-consuming to transcribe the interviews, identify emerging themes and patterns and to analyse those patterns (Flick, 2015). In fact, qualitative research can potentially overwhelm a researcher with a large quantity of raw, uncategorised data, which needs to be coded and themed. Nonetheless, the researcher is aware of the scale of his own study and, thus, has limited the data collection to match the scale of the study.

Kumar (2011) notes that qualitative techniques are not as precise, clear-cut and definitive in their design and execution. Thus, they allow for a degree of informality to develop as well

as adaptation to the needs of the researcher. Whilst this may be advantageous, this also means that it is much harder to compare the findings to other studies or to replicate them elsewhere (Kumar, 2011). However, whilst quantitative studies may find replication and comparison easier, these also may be limited in the extent to which they can make comparisons. This is because we often find that the circumstances for different populations might be different (Kumar, 2011). Thus, qualitative exploratory studies might be required prior to the quantitative replication studies in order to identify, describe and understand the differences in the contexts of the studies being compared.

This concern is also discussed by O’Leary (2009), whereby the author warns that, given that the qualitative design is often not guided by the positivist worldview, its results may be criticised as being unscientific and are thus of reduced value and credibility. However, O’Leary counterargues that this is simply a mistaken approach of applying the wrong criteria to the type of study. Instead, the critical focus should be on: “Whether subjectivities have been managed; methods are approached with consistency; ‘true essence’ has been captured; findings have broad applicability; and, finally, whether research processes can be verified” (O’Leary, 2009, p. 274). Therefore, when it comes to assessing a qualitative work, one must consider different factors than one would for a quantitative study. Thus, O’Leary continues: “Criteria for such assessment, however, are likely to be neutrality or transparent subjectivity rather than objectivity; dependability over reliability; authenticity over validity; transferability over generalizability; and auditability rather than reproducibility” (O’Leary, 2009, p. 274).

There are a number of ways of ensuring that qualitative studies are valid and dependable, and the researcher has followed these techniques in his study to ensure this. One such technique is saturation, where data continues to be collected until no new information is provided to the researcher, which adds to the understanding of the subject being studied. It is also important to keep an open mind and explore various aspects of the subject being studied. O’Leary (2009) also recommends that a great deal of time be spent in understanding and investigating the various backgrounds, circumstances, and contexts that surround the subject of the study and that observation be done in depth rather than at the surface level. It is also important that the participants included in the study are a broad enough and accurate enough representation of the phenomenon or subject being studied (O’Leary, 2009). Therefore, one must be careful that he is allowing a fair representation and giving a fair

opportunity for everyone to voice their contributions. Finally, O’Leary (2009) highlights the importance of peer review.

A further safeguard is that qualitative researchers may choose to disclose any biases they may have, especially since they are often more deeply involved in the narrative produced by the research (Patten & Newhart, 2018). This is particularly important, since qualitative researchers are particularly more vulnerable to bias due to the decreased rigidity and less structured nature of their studies (Kumar, 2011). These important guidelines for ensuring valid and dependable results in a qualitative study have all been followed. Nonetheless, one must also consider that there are limitations to this study, including limitations of time and resources. Thus, certain additional safeguards, such as an extended period of time spent building a relationship with the subjects or certain observations, could only be carried out within a limited scale and timeframe.

3.4.2 Mixed-methods design

A mixed-methods design was also considered for this study. A mixed-methods design combines qualitative and quantitative methods into a single study (Adu & Miles, 2024). This can be done sequentially, whereby first one type of research and data collection takes place, followed by the other. Thus, the research is separated into different stages. Whilst the researcher understands that a mixed-methods approach can particularly enrich the research, the researcher also acknowledges the limitations of the research. Considering the level of this study, there are limitations with regard to word count as well as limitations related to the scale of research in both time and resources. Thus, following consultation with the research supervisor, it was deemed best to instead focus the research on a qualitative aspect, rather than a mixed-methods approach.

3.4.3 Phenomenological case studies

On a more specific level, the type of qualitative research that is being pursued by this research is a phenomenological study. Phenomenology is a research approach which focuses on the subjective experiences and perceptions of the participants (Creswell & Creswell, 2018). Thus, it is consistent with the constructivist worldview. Leedy and Ormrod (2015) describe phenomenological studies as studies that focus on the experiences and perceptions of participants. Thus, they rely significantly on observations and interviews.

3.5 Research methods

This section of the methodology describes the research methods process employed by the research with regard to data collection. It is the third and final component in describing a research approach (Creswell & Creswell, 2018). The research utilises both primary and secondary sources of data.

Secondary data sources are data sources which are not collected directly by the researcher (Rabianski, 2003). These include books, reports, statistics, academic journals, websites, etc. (Biggam, 2011). These are essential sources of data which help to inform the direction of the study. The secondary data sources used for this research consisted of:

- Academic articles, journals and books were consulted for the literature review and the methodology.
- Data on population and demographics from the NSO.

Primary data sources consist of data collected by the researcher (Rabianski, 2003). The primary data was collected by the researcher through two main means. These are direct observations of the UGSs and semi-structured interviews with research participants. Academics such as Wendel et al. (2012) used observations along with semi-structured interviews in studies of a similar nature, ensuring the methodology adopted for this study is modelled on established studies.

3.5.1 Direct observations

Observations have a long-standing tradition in qualitative research. The main benefit of observations is that the researcher is allowed to witness the subject and phenomena first hand, without any biases from participants (Buscatto, 2013), although the researcher may have their own biases and interpretations. Whilst there are many types of observations (Hesse-Biber & Leavy, 2006), observations are generally categorised into direct and participatory observations. This study employed a direct observation style whereby the researcher does not interact with the environment or participants being observed to minimise influence on the subject being observed. This was considered to be suitable for the purposes of the observations, and a participatory approach was not deemed necessary for the aims of the research. Direct observations are generally less time-consuming and have the advantage of allowing the researcher to focus on the subjects being observed given that the researcher

does not have to be engaged as would be the case in participatory observations (Trochim & Donnelly, 2006).

Direct observation of the UGSs in the chosen localities was carried out in March and April of 2024. Whilst maps can provide an idea of the size and position of UGSs, it was felt that further knowledge of the local UGSs was required before commencing any interviews. Direct observations of the UGSs available within each locality were determined to be an adequate tool. Prior to commencing with the direct observations, sources of literature (Gehl & Svarre, 2013; Watson, 2021) were consulted in order to ensure good practice and execution of the method and to become aware of all considerations which need to be taken. For example, Watson (2021) emphasised the importance of considerations such as placement, when and how recordings should take place, preparations for curiosities from the public about the researcher's activity, as well as ethical considerations. Gehl and Svarre (2013) also emphasised the importance of attempting to be as neutral as possible throughout the observations.

Direct qualitative observations were used to collect data on factors such as attractiveness, accessibility, safety and other factors related to UGS quality. This exercise helped the researcher familiarise himself not only with the state and characteristics of the UGSs but also with the environment and experience of being inside the green space. The exercise also allowed the researcher to learn more about the people the UGS attracts. Finally, the exercise was also important as it enabled the researcher to observe the areas immediately surrounding the UGS, and thus, notes could be taken regarding accessibility. In this manner, the researcher could conduct the interviews with a greater degree of confidence and understanding of the UGSs which participants described in their interviews. These observations were of a qualitative nature and follow the styles used in other qualitative studies (Hesse-Biber & Leavy, 2006).

The UGSs in each locality were first catalogued using Google Maps. The researcher made a list of streets in the urban areas of each locality. The streets in the rural areas were ignored, as any green spaces in these streets cannot be categorised as UGSs. The researcher then meticulously scanned each street through Google Maps' aerial view of the three localities in order to take note of any UGS available. The validity of the inclusion of these spaces was then confirmed by using Google Street View to get a better view of the UGSs. A map delineating the urban areas of the three localities and outlining the UGSs within those areas

was produced using ArcGIS Pro, a mapping and spatial analysis software (See Figure 2). Industrial areas and estates were excluded from what was considered the urban area, as the study is focused on the relationship between elderly residents and UGSs within the urban areas.

As has been described earlier, only UGSs, which were designed to be physically accessed, were included in the study. Thus, those which clearly did not have any entrance openings or paths within them were not included. The same can be said for green spaces in roundabouts and central strips. UGSs of all sizes were included if they were deemed to have been designed to permit entrance. Those which served to add greenery and provide environmental and aesthetic benefits were not included. UGSs which were undergoing large-scale renovations and thus could not be assessed were excluded from observations but included in the map and list of UGSs present in the locality. This only happened with the case of Spencer Garden (UGS M4) in Marsa.

The valid UGSs were recorded in a table, which included the street name as well as a code for each UGS and a name whenever this was available (See Appendix A). The researcher visited these streets and UGSs in person in order to confirm their validity for inclusion in the study. The researcher also took the opportunity to photograph the UGSs and carry out the direct observations required by the research. The researcher made these observations of the UGSs over the span of a number of weeks in March and April of 2024. The researcher strove to be consistent with the time at which the observations were made, and thus, observations were mostly carried out in the afternoon/evening. Each UGS was visited once by the observer, and each observation took between 15 and 30 minutes, based on the size of the UGS.

Observation tool

For these direct observations, the researcher used a modified version of the ‘urban green space quality assessment tool’ (Knobel et al., 2021). This tool is also known as the RECITAL tool (uRban grEen spaCe qualITy Assessment tooL). Knobel et al. (2021) developed this tool to rate and compare UGSs in different localities. The tool considers various dimensions, including UGS surroundings, access, facilities, amenities, aesthetics, infrastructure, safety, potential usage, and land cover. Each dimension then includes several specific items (See Table 2). As an example, one may note that the ‘Surroundings’ dimension scores four different items, namely ‘Surrounding buildings visibility’, ‘Surrounding buildings' facade

maintenance', 'Surrounding buildings' facade greenness' and 'Connection to the site.' Thus, whilst the tool has the advantage of considering a wide range of dimensions, it also has the advantage of allowing specific and focused observation on specific items within those dimensions. Each item is assessed and given a score using a suitable type of scoring method. These shall be described further.

Dimension	Dimension description	Item	Type of scoring
Surroundings	Characteristics of the neighbouring area.	Surrounding buildings visibility	Reversed quantity
		Surrounding buildings' façade maintenance	Quality
		Surrounding buildings' facades' greenness	Quality
		Connection to the site	Quality
Access	Measures of accessibility to the site.	Space entries	Combined
		Fences	Combined
		Walking paths	Combined
		Bike lanes	Combined
		Car parking spaces	Quantity
		Guiding signage	Quantity
		Handicapped adaptations	Combined
		Slope	Reversed quantity
Facilities	Presence and quality of features that allow for the realisation of specific activities.	Playgrounds	Combined
		Grass pitches	Combined
		Courts	Combined
		Dog playing grounds	Combined
		Skateboard / BMX ramps	Combined
		Open space for multichoice usage	Combined
		Water-related facilities	Combined
		Outdoor gym	Combined
Amenities	Presence and quality of features that make the UGS more comfortable, convenient, or enjoyable.	Seating and benches	Combined
		Litter disposal	Combined
		Informational signage	Combined
		Picnic tables	Combined
		Drinking fountains	Combined
		Public toilets	Combined
		Shelter	Quantity
		Shade	Quantity
		Dog excrement bins	Combined
		Specific sports amenities	Combined
		Barbeques	Combined
		Café/Kiosk	Combined
		Bike parking	Combined
Aesthetics and Attractions	Measures of beauty and attractiveness.	Vegetable garden	Combined
		Aromatics garden	Combined
		Views	Combined
		Primary surface	Quality
		Material of primary surface	Quality
		Seasonal and high maintenance vegetation	Quality
		Year-round vegetation	Quality
		Water fountain	Combined
		Public art	Combined
		Historic structures or buildings	Combined
		Public attractions	Combined
Incivilities	Elements or characteristics that make	General litter	Reversed quantity
		Alcohol use	Reversed quantity

	the UGS less enjoyable.	Other drugs	Reversed quantity
		Sex work	Reversed quantity
		Vandalism	Reversed quantity
		Noise	Reversed quantity
		Smells	Reversed quantity
Safety	Elements or characteristics that make UGS feel safe.	Lighting	Combined
		Visibility from ground level	Quality
		Visibility from surrounding buildings	Quality
		Safety adaptations from cars	Quantity
		Safety adaptations from bikes	Quantity
		CCTV	Quantity
Potential Usage	Measures of suitability for different activities.	Sports activities in courts	Potential use
		Informal games	Potential use
		Walking or running	Potential use
		Children's play	Potential use
		Conservation or biodiversity	Potential use
		Enjoy landscape	Potential use
		Dog walking	Potential use
		Social activities	Potential use
		Relaxing	Potential use
		Cycling	Potential use
		Water sports	Potential use
		Fishing	Potential use
Land Covers	Measures of land covers. <i>This dimension was not included in the modified tool due to reasons explained on the following page.</i>	Tree cover	Braun-Blanquet
		Bush cover	Braun-Blanquet
		Grass	Braun-Blanquet
		Soft soil cover (gravel, dirt or similar)	Braun-Blanquet
		Tough soil cover (paved or similar)	Braun-Blanquet
Animal biodiversity	Measures of animal diversity. <i>This dimension was not included in the modified tool as its observation requires expertise which the researcher does not possess to a confident degree. This is further explained on the following page.</i>	Rhopalocera (suborder)	Quantity
		Blattodea (order)	Quantity
		Rodentia (order)	Quantity
		Chiroptera (order)	Quantity
		Other mammals (class)	Quantity
		Reptiles and amphibians (class)	Quantity
Birds biodiversity	Measures of bird diversity. <i>This dimension was not included in the modified tool as the observation of this requires expertise which the researcher does not possess. Some of the species are also not typical of a Mediterranean environment. This is further explained on the following page.</i>	Aseriformes (order)	Quantity
		Charadriiformes (order)	Quantity
		Falconiformes and Accipitriformes (order)	Quantity
		Palumbiformes (order)	Quantity
		Psittaciformes (order)	Quantity
		Strigiformes (order)	Quantity
		Coraciiformes (order)	Quantity
		Pisciformes (order)	Quantity
		Paseriformes (order)	Quantity
		Ciconiformes (order)	Quantity

Table 2: The structure of the modified RECITAL observation tool which has been used in the UGS observations. Adapted from Knobel et al. (2021).

Modifications to the RECITAL observation tool

Since the tool was developed outside of Malta, certain aspects of the tool were excluded in order to adapt it to the local context. The dimensions ‘Animal biodiversity’ and ‘Bird biodiversity’ were excluded from the tool, and the scoring was adjusted. This was done since the researcher does not possess the expertise required for the academic observation and identification of the listed species of fauna. This is a limitation which non-expert observers may encounter when using such observation tools in UGSs. As a result, some academics purposefully choose to exclude such dimensions from their studies (Gidlow et al., 2018). Moreover, certain species of animals and birds included in the tool are alien to the Maltese islands, and thus, it was felt that these dimensions should be excluded from the tool.

Another excluded dimension was ‘Surface’. Surface is an important element in UGS quality and function (Miralles-Guasch et al., 2019). However, the researcher deemed the tool design to be flawed with regard to the calculation of scoring for this dimension. This is since the tool offers a number of different surfaces which researchers may observe in their observations of UGSs. Scoring is awarded for each type of surface, based on how prevalent these surfaces are. However, the prevalence of one type of surface automatically reduces the potential for other types of surfaces. Thus, with this scoring system, it was impossible for an UGS to obtain a full score. Potentially, this could unfairly result in a more negative impression of the overall quality of the UGS. It was therefore determined that it was best to exclude this dimension from the tool.

Scoring

Following these modifications, the maximum possible score that an UGS can obtain from the adapted RECITAL tool is 272. This score is derived by totalling scores from the numerous dimensions described earlier. Higher scores indicate high-quality UGSs, whilst lower scores indicate poor-quality UGSs. In every UGS observation, each item within the various dimensions is scored on a five-point Likert scale (Likert, 1932), which goes from 0 to 4. This scoring is done in accordance with a variety of scoring methods. The scoring methods have been assigned by Knobel et al. (2021) according to the suitability of the method to the item being assessed.

The ‘Quantity’ scoring method awards points based on the presence of the item. ‘Quality’ scoring awards points on the maintenance and aesthetics of the item, whilst ‘Combined quantity and quality’ scoring is a combination of the latter two scoring methods. Meanwhile,

‘Reversed Quantity’ scoring awards points based on the absence of an undesirable item, e.g. noise or litter. ‘Potential Use’ scoring awards points according to the potential for the activity to take place. The ‘Braun-Blanquet’ scoring assesses land cover and awards points in accordance with how prevalent a particular land cover is. One then totals the scores for all the items in order to obtain the final score for the UGS. One may therefore obtain scores for individual items within the UGSs, but also scores for an entire dimension, or indeed for the entire UGS. The scoring methods are outlined and explained further in Table 3.

Scoring methods	Score				
	0	1	2	3	4
Quantity	No presence.	Almost no presence.	Present in some areas.	Mostly present.	Always present.
Quality	No presence.	Poorly maintained and aesthetically unpleasant.	Poorly maintained or aesthetically unpleasant.	Well maintained and aesthetically pleasant.	Exceptionally maintained and aesthetically pleasing.
Combined quantity and quality	Not present.	Not fit for purpose.	Fit but need repair or insufficient amount.	Fit and sufficient.	Fit, sufficient, and aesthetically pleasing.
Reversed quantity	Always present.	Mostly present.	Present in some areas.	Almost no presence.	No presence.
Potential use	Activity completely impossible.	Activity possible but with many limitations.	Activity possible with some limitations.	Good conditions for the activity.	Perfect conditions for the activity.
Braun-Blanquet	5 % or less cover.	5% to 25% cover.	25% to 50% cover.	50% to 75% cover.	75% or more cover.

Table 3: *The structure of the scoring system used by the RECITAL observation tool.*

Adopted from Knobel et al. (2021).

Given that the RECITAL tool was formulated in 2021, there have not yet been many studies which have made use of it. Studies such as Knobel et al. (2021) which tested the tool found that it had good inter-rater reliability and was also comprehensive. The authors of that study did note the limitation that the data collection process was time-consuming. Despite good inter-rater reliability, the authors also felt that some degree of observer subjectivity was still present. These benefits and disadvantages were also noted by the current research in the data collection for this study. Nonetheless, the current research has adapted the RECITAL tool to the needs of this research.

3.5.2 Semi-structured interviews

Interviews were the second tool used in the research. Interviews allow for the researcher to understand the lived experience of his participants and the meaning that they attach to such experience (Seidman, 2006). The advantage of semi-structured interviews over structured interviews is that they allow the researcher to direct the interview in accordance to what may be more effective in producing useful knowledge for the research (Brinkmann, 2018). For semi-structured interviews, most of the questions are structured and planned in an interview guide (Merriam, 2009). Nonetheless, adequate space is left for spontaneous, unstructured questions which may arise. This is often achieved through follow-up questions. This ability is regarded as a good quality in an interviewer, and the ability to adapt the interview and the questions is especially important in a semi-structured interview (Braun & Clarke, 2013). The format also allows the interviewer to share his own knowledge on the subject and, thus, further the conversation. This is often not possible with a structured interview (Brinkmann, 2018).

Brinkmann (2018) argues that such interviews are normally used for a descriptive purpose. Thus, the semi-structured interview is often used to determine the experiences of the interviewed person and to understand these experiences as much as possible. Brinkmann notes that interviewers do not often seek the reasons for these experiences. Instead, this task occurs during the researcher's literature studies. Brinkmann (2018) also warns that the participants may not fully understand their experiences. Thus, it is not uncommon to find contradictions and room for various interpretations within one interview. It is the role of the researcher to sift through this complex body of data. Measures based on the literature were taken in order to ensure the validity of the interview. It is important that, as far as possible, the participant is not interrupted by the interviewer during a response (Seidman, 2006). It is

also imperative that the interviewer does not attempt to influence the participant in any way (Seidman, 2006).

Disadvantages

Most of the disadvantages and advantages of semi-structured interviews are similar to those discussed for qualitative methods as a whole. Thus, qualitative interviews have the advantages of offering a richness of data and allowing flexibility for the interviewer (Braun & Clarke, 2013). However, they also require a more significant investment of time, effort and resources (Seidman, 2006). People who use interviews to gather data over quantitative methods may be required to make a greater effort to establish validity and credibility (Seidman, 2006). Some further disadvantages include that interviews are also time-consuming for the participant. This might also cause difficulties in finding participants (Braun & Clarke, 2013). Braun and Clarke (2013) also note that some participants may be hesitant to participate because they will not be anonymous for the duration of the interview and will have to face an interviewer.

Interview guide

An interview guide was created for the purposes of this study (See Appendices G & H). In designing the interview guide, advice and considerations were taken from the literature. The guide's purpose is to help give the interviewers some structure to follow and help the interviewer plan out the path of the conversation, whilst also allowing him to alter this course as necessary (Braun & Clarke, 2013). Thus, it is a very important component of the interview. A variety of questions were employed, including those which asked participants to describe experiences and phenomena, others which asked for descriptions of feelings and perceptions and those which were of a more hypothetical nature (Merriam, 2009). Closed-ended questions were avoided (Merriam, 2009). Braun and Clarke (2013) note the importance of an easy opening question and a concluding question where the participant is asked if there is anything he would like to add.

Braun and Clarke (2013) also argue that interview guides require several drafts and rewritings and are ideally tested on a person before the actual interviews. This suggestion was followed, with the researcher considering several drafts based on relevant literature and following feedback from the research supervisor. The researcher also tested the interview guide on two trusted individuals. This not only allowed for the testing of the interview guide but also allowed the interviewer to gain familiarity with the guide and better practice his

interview skills. Through this process, one can eliminate unhelpful and ineffective questions or those that cause confusion (Merriam, 2009).

3.6 Participant sample

The study succeeded in recruiting the participation of sixteen participants for semi-structured interviews, which took place in April and May 2024. This is in line with the original aims of the research. Participants were recruited via street-intercept techniques (See Section 3.8). The participants included six participants from Attard, five participants from Marsa and five participants from Qormi. Participant requirements for participation in the study were that potential participants resided in the three localities identified for the research and that they were aged 65+. It was also important that participants enjoyed a degree of independent mobility, such that they could visit UGSs if these were within the recommended distances (WHO, 2016). The researcher accepts that some unintentional bias may therefore have occurred in participant recruitment as the selection process was not completely random and was not aimed at providing a representative sample of the elderly population. More information on the participants are outlined in Table 4 on the following page.

Participant	Age	Sex	Years living in current locality	Highest level of education	Employment Status	Living arrangements	Mobility levels
P.1	68	M	~50	Secondary education	Self-employed	Lives with family/others.	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.2	82	M	82	Secondary education	Pensioner	Lives with family/others.	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.3	78	M	78	Post-secondary education	Pensioner	Lives with family/others.	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.4	68	F	20	Post-secondary education	Pensioner	Lives with family/others.	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.5	66	F	43	Secondary education	Pensioner	Lives with family/others.	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.6	73	M	31	Tertiary education	Pensioner	Lives with family/others.	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.7	81	M	72	Secondary education	Pensioner	Lives with family/others.	Can walk a short distance (300 m) but it takes a longer time.
P.8	80	M	80	Secondary education	Pensioner	Lives with family/others.	Can walk with difficulty or assistance.
P.9	77	M	43	Secondary education	Pensioner	Lives with family/others.	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.10	74	M	34	Secondary education	Pensioner	Lives with family/others.	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.11	69	F	21	Post-secondary education	Pensioner	Lives with family/others.	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.12	80	F	~50	Post-secondary education	Pensioner	Lives alone	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.13	86	F	48	Secondary education	Pensioner	Lives with family/others.	Can walk a short distance (300 m) but it takes a longer time.
P.14	82	M	82	Post-secondary education	Pensioner	Lives alone	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.15	67	M	67	Post-secondary education	Pensioner	Lives alone	Can easily walk a short distance (300 m) with ease in under 5 mins.
P.16	72	M	72	Tertiary education	Pensioner	Lives with family/others.	Can easily walk a short distance (300 m) with ease in under 5 mins.

Table 4: Participant information collected by the author. Created by the author.

3.7 Interviews and ethical considerations

Ethical considerations are integral to every phase of a research project, ensuring that the process is conducted with respect for participants. According to Noaks and Wincup (2004), research should be guided by ethical principles at all stages. Jupp et al. (2000) further explain that ethics in research involves establishing appropriate standards for how researchers interact with others during the study, ensuring that these interactions are conducted with respect and integrity. Given the target audience for the interviews, key considerations were taken during participant recruitment and throughout the research process.

The aims and nature of the study, as well as the role of the potential participants, were explained to the potential participants. Interested participants were provided with an information letter (See Appendices C & D) as well as a letter of consent (See Appendices E & F), which they were required to sign in the event that they wished to participate. These were provided to the potential participants in their preferred language, either Maltese or English. Potential participants were given the opportunity to read through the document carefully and in their own time and were urged to contact the researcher or his supervisor with any queries. The research requirements were explained to participants at different stages of the process. This included during recruitment, prior to the interview and after the interview was concluded. A number of steps were taken to ensure comprehension, such as making available the option of providing information in larger text, discussing the research requirements and allowing more time for questions. This allowed participants the autonomy to exercise choice and have the capacity to enter voluntarily into the research study (Beauchamp & Childress, 2009). This process helped the researcher build trust by explaining the study's purpose clearly, addressing privacy concerns, explaining how the data would be used and ensuring the participant understood the research and demonstrated free will to participate.

Obtaining full and informed consent is a fundamental ethical requirement in research. Therefore, the researcher adopted an approach that ensured continuous consent, allowing for the re-evaluation and confirmation of participants' understanding and agreement at various stages of the research. This approach aligns with Tolich's (2016) suggestion that written consent at the start of the interview may be insufficient when working with vulnerable populations. All participants were informed that their participation was voluntary and that

they could withdraw at any time without consequence. A copy of the letter of consent and research information sheet is attached in Appendices C-F.

Additionally, the researcher ensured that the interview topics were respectful and sensitive to the participants' experiences and ages, mindful of any potential emotional discomfort. This included the choice of the interview location, date, and time to schedule the interview. Choosing the location for the interview was given utmost importance. Participants were invited to choose a location which they considered non-threatening, allowing the researcher the opportunity to collect data from a location in which the participant was accustomed to. This included gardens, public spaces and neighbourhoods (Clark & Emmel, 2010). All participants were therefore allowed to identify an appointment and location that was convenient to them and made them feel safe and secure. On the day of the interview, participants were again reminded of their ability to withdraw their consent. Interviews took place in April and May 2024, and participants were allowed to choose their preferred language, either Maltese or English, throughout the interview. All of the participants preferred to conduct the interview in Maltese.

Having carefully established the participant's constant consent, the researcher also ensured good practice when interviewing the participants in order to facilitate the experience and ensure good results. Given that the participants are non-experts and older adults, clear, jargon-free language was used by the researcher during the interviews to ensure understanding. The interviews were conducted in a way that respects the autonomy, values, and lived experiences of older adults. Thus, participants were given the time to explain and divulge their answers without interruption. Follow-up questions were asked where necessary, and the researcher maintained an empathetic, non-judgmental position. In cases where the researcher felt that the participants did not entirely understand a question, the researcher politely re-explained it. Participants were also offered breaks and asked at intervals how they were feeling about the ongoing interview process, in order to ensure their comfort and willingness to continue.

To protect their privacy, all data was anonymised, and participants were assigned pseudonyms. Careful attention was given to ensure that no information published in this research could lead to the identification of the participants. This was explained to all participants, who understood and consented to the fact that their names and other personal identifiers would not be disclosed. All data was securely stored, and all recordings and

transcripts were saved securely in an encrypted and password-protected folder. Recordings were also made using a device not connected to the internet to eliminate the possibility of accidental disclosure. All recordings and transcripts will be destroyed immediately after the grade for this dissertation is made public. This is necessary to avoid the possibility of accidental disclosure. In addition, the codes linking participants' data to their identity were stored securely and separately from the data to ensure anonymity and protect participants' privacy (Schutt, 2012). This approach was used to prevent any potential identification of individuals, maintaining the confidentiality of their information throughout the study.

In addition, approval to proceed with this research as proposed was obtained from the Faculty Research Ethics Committee, ensuring the study met established ethical standards. My research was approved by the Faculty Research Ethics on the 1st of March, 2024 and was assigned reference number: ARTS-2024-00086. The researcher ensured that the conditions arising from this process were respected throughout. In conclusion, the researcher made it a priority to safeguard the well-being of the elderly participants throughout the interview process. By adopting ethical practices and continually prioritising their safety and integrity, the researcher ensured that participants were treated with respect and their needs were consistently met, fostering a safe and supportive research environment.

3.8 Analysis of data

The research produced two main bodies of data, which required analysis. This consisted of the qualitative observations of the UGSs and also the interview results. As explained previously, the observational data consisted of data which primarily assessed UGS quality. This data was present in the form of a sheet for each UGS, which provided scores on numerous items relating to UGS quality (See Appendix B). The data was inputted onto an excel sheet which could display the scoring each UGS obtained for every item. The numerous items assessed were grouped under dimensions in accordance with the RECITAL tool (Knobel et al., 2021). Excel formulas were used to work out a total score for each dimension and ultimately for the UGS as a whole. Formulas were also used to work out averages. High and low scoring UGSs were ranked, and outliers were identified. With regard to the participant interviews, transcripts were developed and inputted into NVivo software (A data analysis software designed to assist researchers in organising, coding, and analysing qualitative data). When necessary, translations were made from Maltese into English. The researcher then carefully read through the transcripts and created several codes from the

transcripts. This allowed the researcher to sort and focus the data according to different subjects and elements. The researcher then studied the contents of each code and was thus able to identify themes in the codified data. The identified themes were themselves analysed, and comparisons were made to the relevant literature. This allowed the researcher to produce his conclusions and to answer the research questions.

3.9 Conclusion

This chapter has discussed the methodology which best suited the aims and objectives of the study. It has also explained how participants for the study were recruited, and the data was collected and analysed. These decisions were all justified in this chapter, and the respective advantages and disadvantages were outlined. The chapter also explained the numerous ethical considerations which were taken. The following chapter will present the results from the observations and semi-structured interviews.

Chapter 4: Findings

The study combined UGS observations and interviews with local elderly residents to comprehensively address the research aim and objectives. While the observations provided valuable insights into the physical and functional aspects of UGS quality, the interviews enriched the analysis by offering context and perspectives from the local elderly population. Together, these methods contribute to a holistic understanding of the current state of UGS quality in the three localities under study. Section 4.1 begins with a description of the findings from the qualitative observations whilst section 4.2 describes the findings of the semi-structured interviews.

4.1 UGS observations: Comparing UGSs in the three localities under study

The study identified 17 UGSs in Attard, 23 in Qormi and 9 in Marsa (See Figures 8,9 and 10). Using ArcGIS Pro, the urban area of Attard was calculated to be around 2.48 km². This means that Attard is provided with 6.9 UGSs/km². Meanwhile, Marsa's urban area is around 1.91 km² and therefore has 4.7 UGSs/km². Qormi's urban area is around 3.07 km² and therefore within this area there are around 7.5 UGSs/km². Thus, in terms of numbers of UGSs available per km², Attard and Qormi are at a clear advantage compared to Marsa in this regard. The urban areas of Attard have a total of 0.072 km² (72,030 m²) covered by UGS as defined by this study. Meanwhile, Qormi has 0.03km² (30,740 m²) whilst Marsa has 0.02km² (20,160 m²). Therefore, in terms of area covered by UGS, as defined by the current study, it is Attard which is at a clear advantage.

Most of the UGSs identified by the study were relatively small, with the mean size of the UGSs being 2,572 m². However, this figure is skewed by a few exceptional UGSs which have a larger size. In fact, the median size of the UGSs is 510 m² and therefore, UGSs studied in the localities are typically small. On average Qormi has several smaller UGSs, whilst Attard's total, is boosted by the size of UGS A1 – San Anton Gardens. Notably, these UGSs were observed to be unevenly distributed across all localities, suggesting that UGS provision may be inequitable for different neighbourhoods.

Based on the latest census reports (NSO, 2023), one can estimate that there are 721.65 residents for each UGS, as defined by this study, in Attard. In turn, there are 135.76 elderly

residents for each UGS in Attard. Meanwhile, in Marsa, the figures are 781.1 and 154.13, respectively, whilst those for Qormi are 786.91 and 161, respectively. Having described the findings with regard to availability, this section continues to describe the quality of the UGSs observed in this study by using the scoring data collected by the modified RECITAL tool.



Figure 8: Map of the UGSs in Attard. The map shows the UGSs (marked in green) which were included in the study. The red border delineates the urban area of Attard. *Created by the author.*

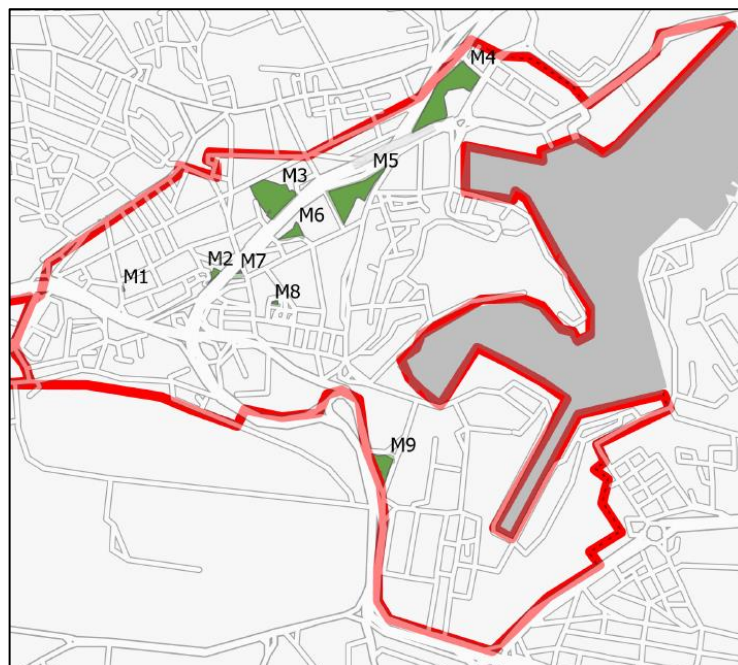


Figure 9: Map of the UGSs in Marsa. The map shows the UGSs (marked in green) which were included in the study. The red border delineates the urban area of Marsa. *Created by the author.*

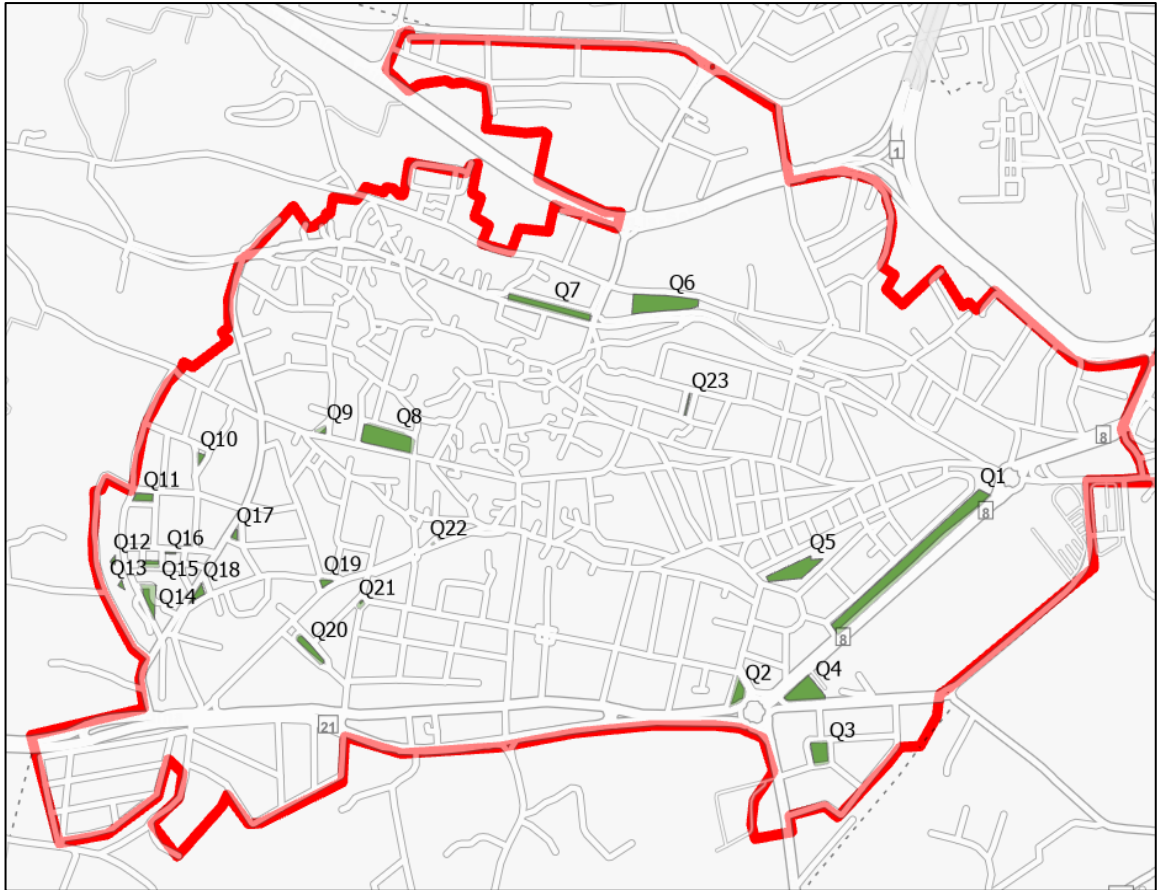


Figure 10: Map of the UGSs in Qormi. The map shows the UGSs (marked in green) which were included in the study. The red border delineates the urban area of Qormi. Created by the author.

Prior to describing the actual results, it is important to make some comparisons with regard to the scoring obtained by the studied localities for their UGSs. Comparing the UGSs in the studied locations, one finds that the UGSs in Attard obtained an average score of 110.6 on the modified RECITAL tool. Meanwhile, the UGSs in Qormi obtained an average score of 101.9. Those of Marsa obtained an average score of 93.8 (See Figure 11). Thus, the differences are minimal, and the UGSs are, in fact, very close to each other in terms of scoring. When one excludes the outliers, the results become even more similar, with UGSs in Attard obtaining an average score of 103.1, those in Qormi obtaining a score of 101.9, and those in Marsa a score of 99.1. These results excluded two outliers in Attard, which scored significantly better than the average UGS (UGS A1 and UGS A5), and also an UGS in Marsa, which scored significantly worse than the average UGS (UGS M9). The results from the observations, therefore, indicate that there is little to separate the three localities in terms of UGS quality.

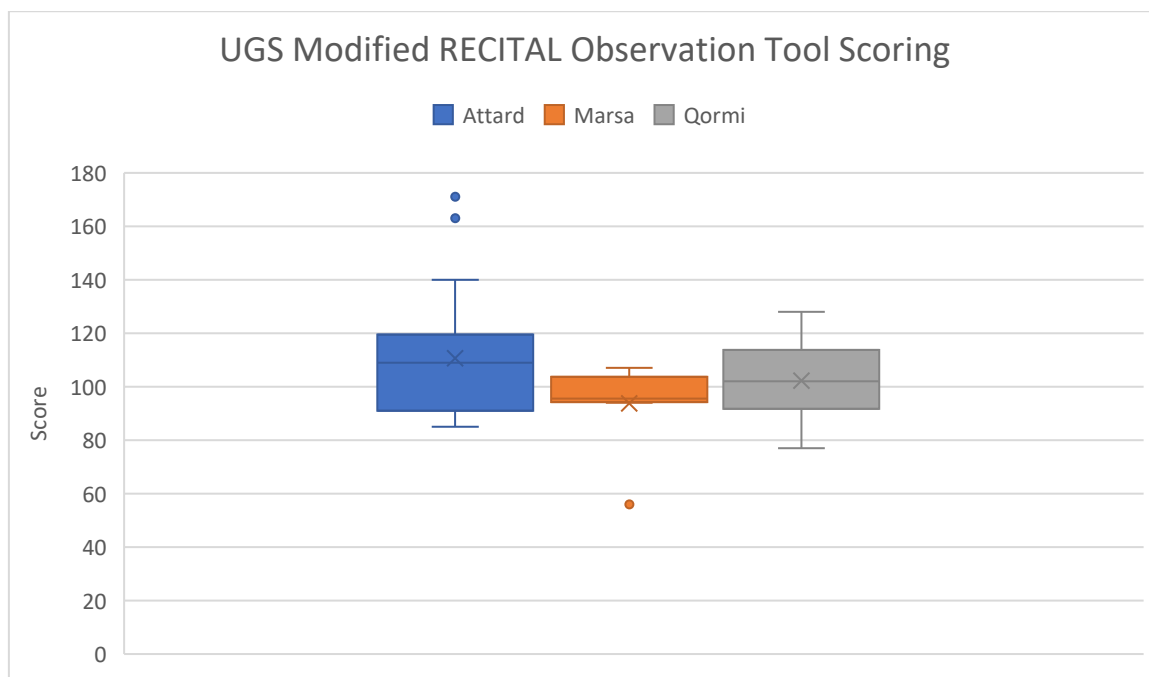


Figure 11: *UGS Modified RECITAL Observation Tool Scoring (The range and distribution of scores obtained by the UGSs in each locality from the modified RECITAL tool).* Created by the author.

In fact, a closer look at the results reveals a narrow range between the average scores for each locality. Given that the average scores for Attard, Qormi and Marsa were 110.6, 101.9 and 93.8, respectively, the range of average scores is limited to a narrow 16.8 points. When outliers are excluded, this range is reduced to just 4.1 points.

Using the standards set by the RECITAL tool, the average scores obtained by UGSs in the localities under study suggest a low quality of UGSs. By a considerable margin, all three localities failed to reach even half of the maximum possible score (272) of the adapted RECITAL tool. In fact, UGSs in Attard, on average, obtained 37.9% of the total possible score, those in Qormi only 37.6%, and those in Marsa only 36.5%. This indicates the prevalence of poor-quality UGSs, which fail to meet the various standards required to provide better services and are classified as high-quality UGSs.

The following section provides a more detailed analysis of the results with regard to the different dimensions assessed in the observations. For the purposes of fair comparison, the outlier UGSs will be excluded from the results described below. Looking at the average score of the UGSs, one finds that on average, the UGSs scored poorly across most dimensions assessed by the adapted RECITAL tool (See Figure 12). The only exceptions

were the ‘Safety’ and ‘Incivilities’ dimensions. These dimensions obtained 84.1% and 84% of the total possible score allocated for these dimensions, respectively. The other dimensions fared very poorly. UGS ‘Surroundings’ obtained only 49.7% of the total available score. ‘Access’ obtained only 45.4% of the potential full score. The worst-faring dimensions consisted of ‘Potential Usage’, which obtained 26.6% of the possible scoring, ‘Aesthetics and Attractions’ with 24.3%, ‘Amenities’ with only 20.8% of the possible scoring and finally ‘Facilities’ with just 5.4% of the possible scoring. Thus, according to the results of the adapted RECITAL tool, none of the localities can claim a generally high-quality level of UGSs.

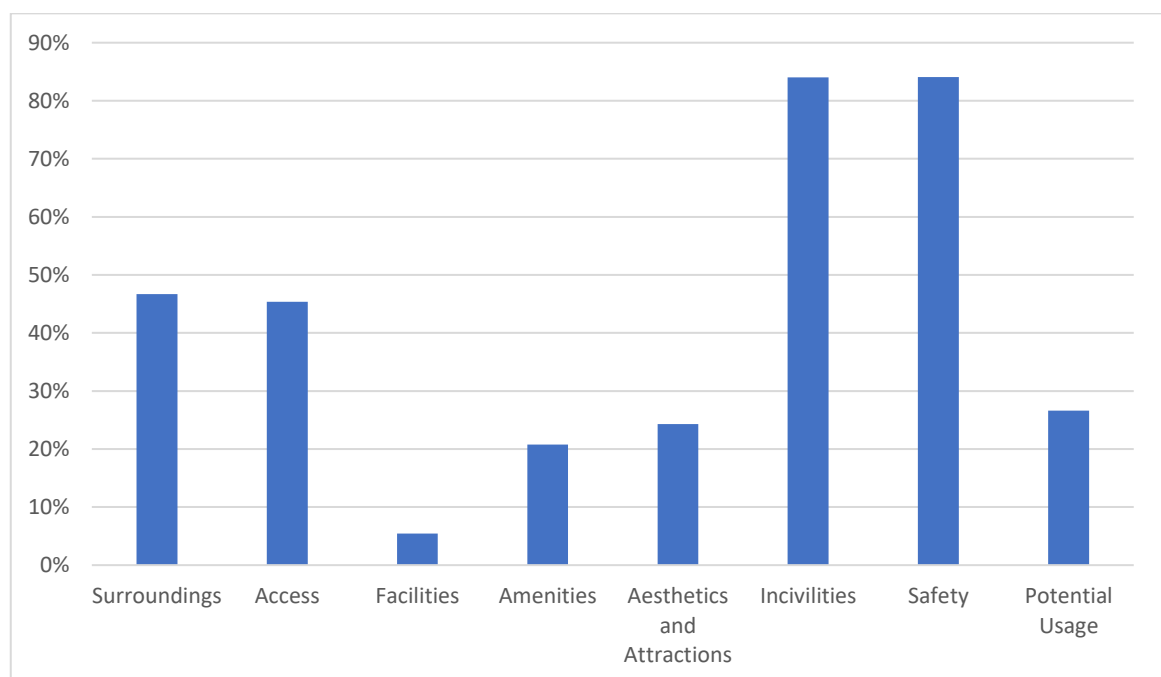


Figure 12: *Modified RECITAL Dimensions (Percentage of the score for UGSs out of the possible maximum).* Created by the author.

Nonetheless, this does not mean there are no exceptions, where some outlier UGSs are of higher quality. For example, Attard had Ġnien l-Istazzjon (UGS A5) and San Anton Gardens (UGS A1) as the UGSs with the highest scores: 171 and 163, respectively. Nonetheless, a considerable gap remains between the scores obtained by these UGSs and the maximum score attainable in the adapted RECITAL Tool as even these UGSs have numerous shortcomings.

4.1.1 Observations: UGS ‘Surroundings’ dimension

In Attard, the ‘Surroundings’ dimension had an average score of 8.47 out of a maximum possible score of 16 (See Table 5). This was slightly higher than 7.95 for Qormi and 7.43 for Marsa. The visibility of surrounding buildings from the UGS and the building’s maintenance and greenness determine the score of this dimension, along with the UGS’s connection to the site. Thus, based on the scores, it would appear that on average, the surroundings of UGSs are not particularly attractive or in some cases not even particularly well-maintained. In Attard, buildings surrounding UGSs were better maintained and were more aesthetically pleasing than those surrounding UGSs in Qormi or Marsa. In the three localities, most UGSs have a high visibility of surrounding buildings, and thus, one can easily see buildings from within the UGS. UGSs in Marsa fared better on this item, mainly due to tree cover obscuring the surrounding buildings. Surrounding buildings in Attard were more likely to have façade greenness, although even here, many buildings did not have greenness on their facades. Connection to the surrounding site was largely similar between UGSs in the three localities.

	Surroundings (characteristics of the neighbouring area)				
	Surrounding buildings visibility	Surrounding buildings façade maintenance	Surrounding buildings facade greenness	Connection to the site	Total dimension score
Attard UGSs	0.27	3.07	2.07	3.07	8.47
Marsa UGSs	1.43	2.29	0.71	3.00	7.43
Qormi UGSs	0.74	2.74	1.57	2.96	7.95
Average score (all localities)	0.81	2.70	1.45	3.01	7.95
Maximum possible score	4.00	4.00	4.00	4.00	16.00
Average score obtained from the maximum possible score	20.29%	67.43%	36.22%	75.19%	49.69%

Table 5: *Dimension scores - Surroundings (Characteristics of the neighbouring area).*
Created by the author.

4.1.2 Observations: UGS ‘Access’ dimension

Regarding the ‘Access’ dimension, the UGSs in all three localities obtained average scores, as seen in Table 6, indicating that accessibility to UGSs may be an issue in some cases. All localities had obtained above-average scores for space entries, with UGSs in Qormi scoring slightly better than Attard's, while Marsa's scored lower. Perimeter fences and boundary walls were on average less present and not particularly aesthetically pleasing, particularly in Qormi. Walking paths were mostly well-maintained. Only one UGS in Attard had a dedicated bike lane providing access to it. A fair level of car parking was available on average. Most UGSs had no guiding signage, most likely due to their small size. Disability adaptations were also minimal. Besides ramps for wheelchair users in some of the UGSs, very little else was observed. Slope was also assessed, but it was largely not an issue for most of the UGSs, except for a few cases in Marsa.

	Access (measuring of accessibility to the site)								
	Space entries	Fences	Walking paths	Bike lanes	Car parking spaces	Guiding signage	Disability adaptations	Slope	Total dimension score
Attard UGSs	2.60	2.00	3.13	0.20	2.87	0.00	0.67	3.87	15.33
Marsa UGSs	2.57	1.57	3.00	0.00	2.71	0.00	0.86	2.86	13.57
Qormi UGSs	2.65	1.22	3.00	0.00	3.17	0.00	1.04	3.78	14.64
Average score (all localities)	2.61	1.60	3.04	0.07	2.92	0.00	0.86	3.50	14.51
Maximum possible score	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	32.00
Average score obtained from the maximum possible score	65.20%	39.91%	76.11%	1.67%	72.96%	0.00%	21.39%	87.55%	45.36%

Table 6: *Dimension scores - Access (Measuring of accessibility to the site).* Created by the author.

4.1.3 Observations: UGS ‘Facilities dimension

‘Facilities’ is the dimension that attained the lowest average score and therefore, the weakest dimension of the UGSs studied (See Table 7). This dimension is described on the RECITAL tool as the “presence and quality of features that allow for the realisation of specific activities” (Knobel et al., 2021, p.2). On average, UGSs in the three localities obtained a 1.74 score out of 32 on this dimension. UGSs in Attard held an average score of 2, whilst those in Marsa and Qormi obtained 1.86 and 1.36, respectively. This score paints a bleak

picture of the number of facilities available in the UGSs and the quality of the existing features. The items which contributed most to this dimension's score were 'playgrounds' and 'open space for multi-choice usage'. These were found in a limited number of UGSs across all three localities. Grass pitches, courts, dog playing grounds, skateboard ramps and water-related facilities were almost completely absent. One final aspect of this dimension is the presence of outdoor gyms. However, only one UGS in Attard and another in Qormi had an outdoor gym.

	Facilities (Presence and quality of features that allow for the realisation of specific activities)								
	Playground	Grass pitches	Courts	Dog playing grounds	Skateboard/BMX ramps	Open space for multichoice usage	Water-related facilities	Outdoor gym	Total dimension score
Attard UGSs	0.60	0.00	0.00	0.00	0.00	1.20	0.00	0.20	2.00
Marsa UGSs	0.71	0.00	0.29	0.00	0.00	0.86	0.00	0.00	1.86
Qormi UGSs	0.57	0.26	0.04	0.00	0.00	0.48	0.00	0.04	1.36
Average score (all localities)	0.63	0.09	0.11	0.00	0.00	0.85	0.00	0.08	1.74
Maximum possible score	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	32.00
Average score obtained from the maximum possible score	15.66%	2.17%	2.74%	0.00%	0.00%	21.13%	0.00%	2.03%	5.44%

Table 7: Dimension scores - Facilities (Presence and quality of features that allow for the realisation of specific activities). Created by the author.

4.1.4 Observations: UGS 'Amenities' dimension

In the 'Amenities' dimension, UGSs also fared poorly, with an average score of 10.79 out of a possible 52 (See Table 8). UGSs in Marsa and Qormi reached a score of 10.86 and 10.78, respectively, whilst those in Attard had a score of 10.73. In the RECITAL tool, the 'Amenities' dimension consists of the "presence and quality of features that make the UGS more comfortable, convenient, or enjoyable" (Knobel et al., 2021, p.2). Whilst this is a broad term, it includes essential amenities such as benches, litter disposal, public toilets, shade and kiosks. Qormi's UGSs scored the highest in seating and benches, with Marsa and Attard faring slightly worse. In all three localities, several UGSs had aesthetically pleasing and well-maintained benches. However, the average score for these localities on this item was severely reduced due to several UGSs not having seating and benches, particularly in Attard.

There were also instances of UGSs where benches were not maintained after experiencing damage, vandalism, having paint peel off or being covered with bird droppings and dirt.

Regarding litter disposal, Marsa's UGSs fared slightly better than Qormi and Attard's. Once again, whilst most litter disposal bins were maintained and mostly aesthetically sound, the average score allocated to this item was significantly reduced in all three localities due to a number of spaces not having any means of litter disposal. This applied particularly to the smaller UGSs. Instances of poorly maintained bins were also observed, but this was often an exception. Dog excrement bins were generally well-maintained. However, some UGSs lack these bins, resulting in a lower average score. In some cases, the absence of bins may be intentional, as regulations prohibit dogs from accessing certain UGSs.

The average scores regarding information signage were low. Only a small number of UGSs had any information signage. This was primarily limited to the larger UGSs and mostly concerned regulations, information regarding the opening and closing times and refurbishments of the UGSs, and occasionally other details. Very little information was available regarding flora and fauna or any other relevant items of interest. Nonetheless, the signage was mostly well maintained, and the low score is mainly attributed to many UGSs having no such signs.

Public toilets were absent in most UGSs across the studied localities. Among the available facilities, some were well-maintained, while others were poorly kept, dirty, and malodorous. Others were also locked even during the daytime. Shelter was also an essential aspect of the amenities dimension. This includes gazebos and similar structures which offer shelter. However, very few were present in the UGSs. Meanwhile, the item 'shade' was more frequently encountered as shade is often provided by trees, boundary walls or surrounding buildings. On average, UGSs in Attard and Marsa provided more shade than those of Qormi.

All the UGSs lacked picnic tables, drinking fountains and barbeques. Meanwhile, only one UGS in Qormi had specific sports amenities. In Attard and Qormi, very few UGSs had bike parking, and in Marsa, there were no bicycle parking spaces in any of the UGSs. Only one UGS in Attard had a café or kiosk. These amenities all serve to make UGSs more attractive, comfortable and enjoyable. Therefore, it is very concerning that UGSs across the three localities should score so poorly on these items, and it speaks to the reduced standard regarding the quality of the studied UGSs.

	Amenities (presence and quality of features that make the UGS more comfortable, convenient, or enjoyable).													
	Seating and benches	Litter disposal	Information signage	Picnic tables	Drinking fountains	Public toilets	Shelter	Shade	Dog excrement bins	Specific sports amenities	Barbeques	Café/kiosk	Bike parking	Total dimension score
Attard UGSs	2.33	2.20	0.73	0.00	0.00	0.33	0.60	2.40	1.73	0.00	0.00	0.00	0.40	10.73
Marsa UGSs	2.71	2.86	0.86	0.00	0.00	0.43	0.57	2.14	1.29	0.00	0.00	0.00	0.00	10.86
Qormi UGSs	2.78	2.65	1.04	0.00	0.00	0.22	0.30	1.48	2.09	0.13	0.00	0.00	0.09	10.78
Average score (all localities)	2.61	2.57	0.88	0.00	0.00	0.33	0.49	2.01	1.70	0.04	0.00	0.00	0.16	10.79
Maximum possible score	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	52.00
Average score obtained from the maximum possible score	65.25%	64.24%	21.95%	0.00%	0.00%	8.16%	12.30%	50.18%	42.55%	1.09%	0.00%	0.00%	4.06%	20.75%

Table 8: Dimension scores – Amenities (Presence and quality of features that make the UGS more comfortable, convenient or enjoyable). Created by the author.

4.1.5 Observations: UGS ‘Aesthetics and attractions’ dimension

Aesthetics and attractions were another dimension in which UGSs also fared relatively poorly (See Table 9). The average score for UGSs in Qormi was 11.23, whilst those in Attard were 10.53 and those in Marsa were 10.29 out of a maximum possible score of 44 points for each UGS. None of the UGSs had vegetable or aromatic gardens, except for the outliers in Attard (UGS A1 and A5), which did feature aromatic gardens. Views were also minimal as buildings and boundary walls surrounded most UGSs. This was expected as none of the localities under study are on hilltops or other places with viewpoints. The primary surface was maintained in reasonably good condition and was aesthetically pleasing on average. The same can be said for the material from which the primary surface was made.

Vegetation maintenance varied according to the type of vegetation. Year-round vegetation, such as trees and large bushes, was well-kept in all three localities. Meanwhile, seasonal and high-maintenance vegetation scored poorly in all three localities, particularly in Marsa. UGSs in Marsa were dominated more by year-round than high-maintenance vegetation. Water fountains were also seldom observed in UGSs. There were also instances of fountains that were either non-operational or poorly maintained. Most UGSs were devoid of public art, with a few exceptions in Attard, such as the newly refurbished L-Istazzjon, which hosts a cardboard train model. However, this UGS is being considered as an outlier. Historic structures or buildings are uncommon, with such instances only being found in Attard and Qormi. This includes the outliers San Anton Gardens (UGS A1) and Ġnien l-Istazzjon (UGS A5) in Attard and one other UGS in Qormi. Public attractions are also limited to Attard and Qormi. This consists of a number of statues and busts. The poor scores obtained in the aesthetics dimension are very concerning as they point out that the UGSs may not be as attractive as they could be.

	Aesthetics and attractions (measures of beauty and attractiveness)											
	Vegetable garden	Aromatic gardens	Views	Primary surface	Material of primary surface	Seasonal and high-maintenance vegetation	Year-round vegetation	Water fountain	Public art	Historic structures or buildings	Public attractions	Total dimension score
Attard UGSs	0.00	0.00	0.07	2.60	2.60	1.67	3.07	0.00	0.00	0.00	0.53	10.53
Marsa UGSs	0.00	0.00	0.00	3.00	3.00	1.00	2.71	0.57	0.00	0.00	0.00	10.29
Qormi UGSs	0.00	0.00	0.00	2.57	2.65	1.87	3.00	0.39	0.00	0.13	0.65	11.23
Average score (all localities)	0.00	0.00	0.02	2.72	2.75	1.51	2.93	0.32	0.00	0.04	0.40	10.68
Maximum possible score	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	44.00
Average score percentage obtained from the maximum possible score	0.00%	0.00%	0.56%	68.04%	68.77%	37.80%	73.17%	8.02%	0.00%	1.09%	9.88%	24.28%

Table 9: *Dimension scores – Aesthetics and Attractions (Measures of beauty and attractiveness).* Created by the author.

4.1.6 Observations: UGS ‘Incivilities’ dimension

Incivilities are an essential dimension affecting the success of an UGS. The adapted RECITAL tool looked at several items which indicate incivilities in UGSs. UGSs scored 23.5 out of a potential 28 points for this dimension (See Table 10). Attard was observed to have the least incivilities (24.20), followed by Qormi (23.64) and then by Marsa (22.71). Littering was the first item assessed in this dimension. UGSs in Attard scored reasonably well, while UGSs in Qormi and Marsa scored worse. Most litter is related to food and drink packaging, organic material, cigarette butts and other random items. Scores indicated that alcohol use was almost completely absent in UGSs in Attard and Qormi, whilst slightly more observable in Marsa’s UGSs. Nonetheless, Marsa still had overall low instances of alcohol usage in UGSs overall. This item was assessed through observations of evidence of alcohol consumption, such as bottles and cans, as well as direct sightings of individuals consuming alcoholic beverages in the UGSs.

With regard to drug use, this was completely unobserved in Attard and only in one instance in Qormi and another in Marsa. Nonetheless, the researcher acknowledges that scoring this item in the UGSs is challenging, as the presence of the observer may influence the occurrence of such activities. Therefore, the observation was limited to evidence, such as syringes found on the ground. Similarly, it was difficult to accurately assess if sex work was present in any of the UGSs. None of such instances were observed; thus, all UGSs obtained a perfect score on this item.

Evidence of vandalism was observed, but in limited instances such as damage to benches, broken glass and graffiti. Concerning noise, the UGSs of the three localities had very similar and average scores. Mostly, noise came from nearby traffic and/or construction works. This is unsurprising given that a number of these UGSs are small and surrounded by roads, some of which are quite busy. Size, trees, and design helped to mitigate this noise in some spaces. Regarding smells, the UGSs, on average, received good scores. Most pungent smells came from dog or cat fouling, organic litter, unemptied bins and human urination. Whilst there are instances of incivility, overall, the scoring indicates that these are rather limited.

	Incivilities (elements or characteristics that make the UGS less enjoyable)							
	General litter	Alcohol use	Other drugs	Sex work	Vandalism	Noise	Smells	Total dimension score
Attard UGSs	2.87	3.87	4.00	4.00	3.67	2.47	3.33	24.20
Marsa UGSs	2.14	3.00	3.86	4.00	3.43	2.71	3.17	22.71
Qormi UGSs	2.74	3.74	3.96	4.00	3.87	2.26	3.28	23.64
Average score (all localities)	2.58	3.54	3.94	4.00	3.65	2.48	3.26	23.52
Maximum possible score	4.00	4.00	4.00	4.00	4.00	4.00	4.00	28.00
Average score obtained from the maximum possible score	64.57%	88.38%	98.45%	100.00%	91.37%	62.02%	81.54%	83.99%

Table 10: *Incivilities (Elements of characteristics that make the UGS less enjoyable).*

Created by the author.

4.1.7 Observations: UGS ‘Safety’ dimension

This dimension considers elements that influence how safe individuals feel in an UGS, particularly for elderly visitors. Overall, UGSs scored reasonably well in this dimension, averaging 20.18 out of 24 points (See Table 11). UGSs in Marsa scored 20.71 on average, whilst those in Qormi scored 20.09, and those in Attard scored 19.73. Lighting is an important factor in determining safety, both during the daytime and in the evenings. All UGSs fared well on this item. Ground-level visibility was rated reasonably good in all three localities. Visibility is also often available from surrounding buildings. Despite several UGSs being surrounded by roads, most UGSs have protection from cars, including boundary walls, steep pavements, traffic speed controls and others. Nonetheless, Qormi’s UGSs were the least safe from cars, as several spaces did not have such infrastructure. All UGSs were observed to be safe from bicycles, mainly because most of these UGSs were too small for bicycle use or because bicycles were banned from such spaces. CCTV cameras were absent in numerous UGSs, across all three localities.

	Safety (elements or characteristics that make UGSs feel safe).						
	Lighting	Visibility from ground level	Visibility from surrounding buildings	Safety adaptations from cars	Safety adaptations from bikes	CCTV	Total dimension score
Attard UGSs	3.47	3.40	3.53	3.47	4.00	1.87	19.73
Marsa UGSs	3.86	3.29	3.29	4.00	4.00	2.29	20.71
Qormi UGSs	3.78	3.83	3.83	2.83	3.87	2.13	20.09
Average score (all localities)	3.70	3.50	3.55	3.43	3.96	2.09	20.18
Maximum possible score	4.00	4.00	4.00	4.00	4.00	4.00	24.00
Average score obtained from the maximum possible score	92.55%	87.60%	88.71%	85.77%	98.91%	52.36%	84.08%

Table 11: *Dimension scores – Safety (Elements or characteristics that make UGS feel safe).* Created by the author.

4.1.8 Observations: UGS ‘Potential usage’ dimension

Potential usage is a crucial dimension in creating a high-quality and attractive UGS. The UGSs, on average, fared relatively poorly, scoring 11.71 out of a potential maximum of 44 points (See Table 12). The UGSs in Attard obtained 12.07 on average, whilst those of Marsa obtained 11.71 and those of Qormi 11.36. Most UGSs permit some level of informal games or children's play, but this was nonetheless also limited. Walking and running opportunities were also largely restricted across most UGSs in the localities studied, primarily due to the small size of the UGSs. Attard had the highest score of 0.67 out of 4 possible points.

UGSs scored an average of 2.11 out of a potential four points on their ability to conserve biodiversity. This score was similar in Attard and Qormi, as UGSs had dedicated patches of soil and vegetation crucial to local flora and fauna. The scores were lower in Marsa. UGSs were limited in allowing the user to enjoy the landscape. This is mainly because UGSs were relatively small and surrounded by roads. UGSs in Attard were the best adapted for dog walking. However, it still obtained a relatively low score, with UGSs in Marsa and Qormi performing even worse. Most UGSs received low scores for supporting social activities, primarily due to limited space and poor design. The ability to relax in these spaces was also constrained, mainly by noise, small size, and factors such as unattractive aesthetics and lack of shelter. Cycling, water sports and fishing were deemed to be unviable in the UGSs under study. The following section shall present the findings from the semi-structured interviews.

	Potential usage (measures of suitability for different activities)											
	Informal games	Walking or running	Children's play	Conservation of biodiversity	Enjoy landscape	Dog walking	Social activities	Relaxing	Cycling	Water sports	Fishing	Total dimension score
Attard UGSs	2.20	0.67	1.93	2.20	1.00	0.80	1.53	1.67	0.07	0.00	0.00	12.07
Marsa UGSs	2.29	0.43	1.86	1.86	0.71	0.57	2.14	1.86	0.00	0.00	0.00	11.71
Qormi UGSs	1.87	0.48	1.78	2.26	1.00	0.39	2.26	1.57	0.00	0.00	0.00	11.36
Average score (all localities)	2.12	0.52	1.86	2.11	0.90	0.59	1.98	1.70	0.02	0.00	0.00	11.71
Maximum possible score	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	44.00
Average score obtained from the maximum possible score	52.96%	13.11%	46.44%	52.65%	22.62%	14.69%	49.48%	42.41%	0.56%	0.00%	0.00%	26.62%

Table 12: *Dimension scores – Potential Usage (Measures of suitability for different activities).* Created by the author.

4.2 Interview results analysis

The findings presented in this section reflect the subjective experiences and perceptions of the elderly participants, as gathered through semi-structured interviews conducted during the study. In compiling this section, the researcher used NVivo to code key aspects, notions, sentiments and words/phrases expressed by the participants throughout the interviews. Any opposing viewpoints and perspectives that may be of interest to the study were also highlighted. The identified patterns in sentiment, expression and perception were compiled into three central themes, each containing several sub-themes (See Figure 13). This section provides a deeper understanding of participants' perceptions of the UGSs in their locality, including how they use these spaces and the benefits they perceive. It also offers insights into the accessibility of the UGSs and includes a comparison of participants' responses across different localities.

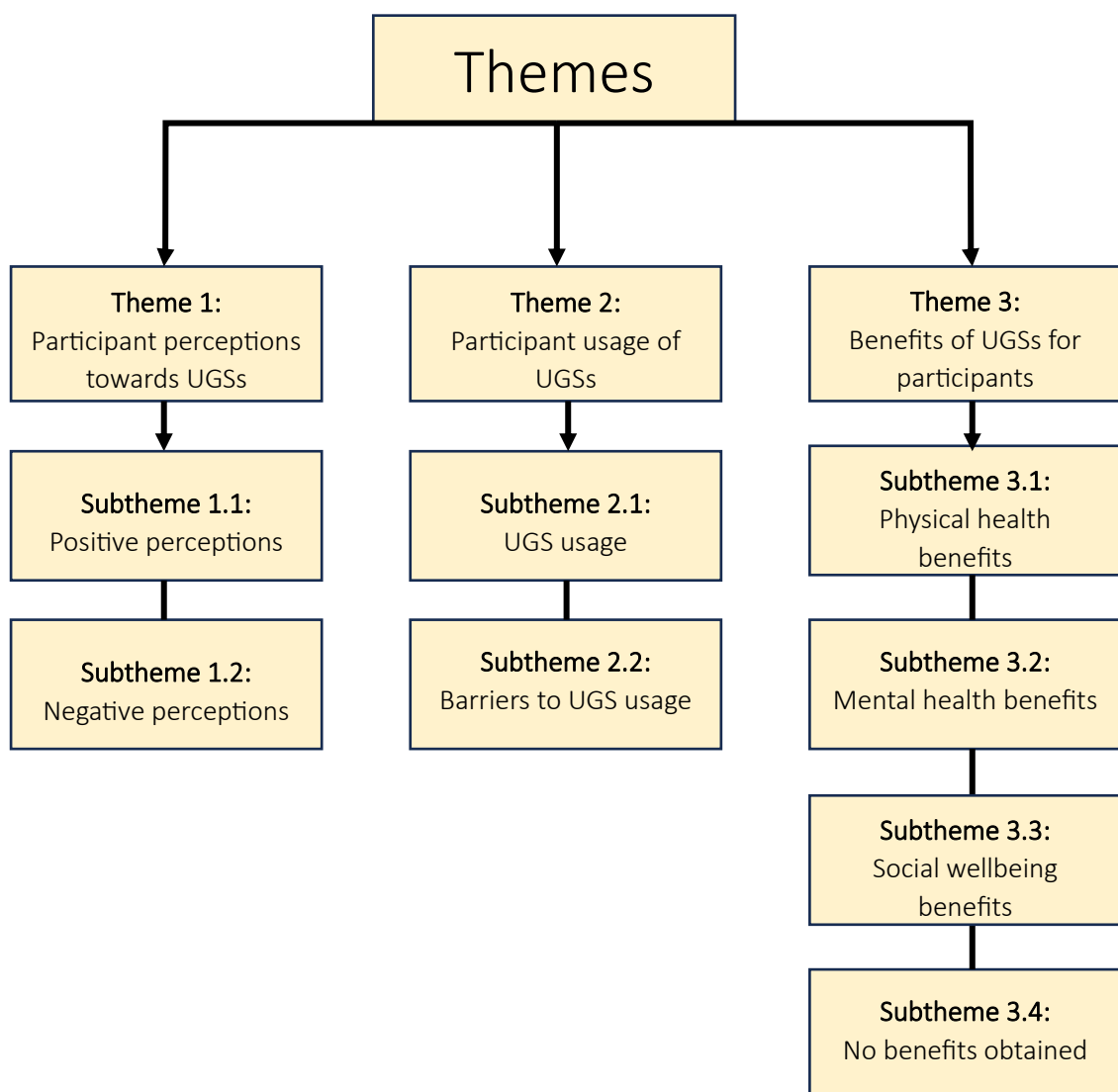


Figure 13: Themes which emerged from participant interviews. Created by the author.

4.2.1 Theme 1: Participant perception towards UGSs

Participants expressed a range of views and perceptions regarding the UGSs in their locality, and as a result, 'perception' emerged as one of the key themes in the analysis of the interviews. A few participants had clear, decisive opinions, which made it easy to categorise their perceptions as either positive or negative. However, most participants offered more nuanced perspectives, comparing individual UGSs and thus describing positive perceptions regarding some UGSs and negative perceptions regarding others. The majority of participants could provide such nuance, even concerning particular UGSs, discussing both positive and negative aspects of individual UGSs. It is, therefore, an oversimplification to state that the majority of participants held positive or negative views on UGSs in their locality. With most participants, this has been demonstrated to be dependent on the particular UGS or even the particular aspect of the UGS. This theme describes and analyses the aspects or features which are valued in local UGSs and what elements UGSs are potentially lacking according to the study participants.

4.2.1.1 - Subtheme 1.1: Positive perceptions

Many participants held positive perceptions about the UGSs in their locality or at least managed to identify positive aspects within their UGSs. These included aspects related to aesthetic elements within the UGSs, as well as perceptions concerning the maintenance, size, location, accessibility, functions and features.

Aesthetics

The most discussed element concerning the positive descriptions and perceptions of local UGSs was that of aesthetics. Indeed, twelve of the participants expressed positive views relating to the beauty of the UGSs in their locality. All participants in Attard expressed that their UGSs have beautiful aesthetic qualities overall. In Marsa, four of the five interviewed residents also expressed this opinion. However, in Qormi, only two of the five interviewed residents expressed that the UGSs in their locality are beautiful and attractive. This suggests a potential deficiency in the perceived beauty of the UGSs in this locality. This is interesting given that in the researcher's observations, UGSs in Qormi scored marginally better than those of Attard and Marsa in terms of aesthetics.

In Attard, San Anton Gardens (UGS A1), Misraħ Kola (UGS A12) and the recently refurbished Ġnien l-Istazzjon (UGS A5) (See Figure 14) were the most praised with regard

to the aesthetics dimension. This was expected given that these are the most well-known and popular UGSs within the town. Meanwhile, in Qormi and Marsa, the participants deemed a variety of UGSs as beautiful. In Qormi, UGS Q7 and Ġnien Federico Maempel (UGS Q8), and Ġnien George Hyzler (UGS Q20) were the most praised for their aesthetic beauty. Meanwhile, Tas-Samra (UGS M3) and UGS M5 were frequently praised in Marsa for their aesthetic value. This was also reflected in the researcher's observations, as the mentioned UGSs achieved better scores.



Figure 14: *‘Ġnien l-Istazzjon’ (UGS A5). This UGS in particular was particularly praised by the residents of Attard for its aesthetic qualities. Photograph taken by the author.*

Trees, flowers and vegetation

When participants elaborated on the perceived aesthetic value, numerous aspects were described. Five participants identified trees, flowers, and vegetation as important aspects that contribute to the beauty of local UGSs, and the respondents greatly valued these elements. Interestingly, none of these respondents were from Qormi, despite having relatively good scores regarding year-round vegetation and comparable scores regarding seasonal and high-maintenance vegetation. Participants who praised this aesthetic aspect of their UGSs spoke of the beauty that flowers add to the UGSs in which they are present. Participants 1, 5 and 15 explained their preference and appreciation for flowers as these bring colour and variety to otherwise dull and dry soil patches (See Figure 15).



Figure 15: *Flowerbeds in San Anton Gardens (UGS A1). Flowers were praised for adding colour and beauty to UGSs. Photograph taken by the author.*

Participants also valued trees for their aesthetic appeal. Indeed, in the researcher's observations, trees were amongst the highest scoring attractions in the UGSs under study. Participants, such as Participant 6, placed particular value on old and local native trees, such as olive trees (*Olea europaea*).

Animals

A number of participants identified animals as contributing to UGS aesthetics. Four such responses came from residents living in Attard and one from a resident living in Qormi. In interviews with participants from Attard, this dimension was often brought up when participants described what they liked about San Anton Gardens (UGS A1), an UGS often preferred and favoured by the respondents. Animals found here, such as ducks, peacocks, chickens, turtles, fish and cats, were admired for their beauty. Participants 2 and 5, both from Attard, noted that one of the main reasons for choosing to visit San Anton Gardens (UGS A1) was the presence of animals, as they are both aesthetically pleasing and provide an engaging experience. This is illustrated by one comment: "...and then, you keep walking and you come to the part where there are the animals. Beautiful. Those ducks, turtles. I like the turtles. I spend so much time looking at them! And there are so many cats!" [P.5].

Infrastructure and amenities

Infrastructure and amenities were praised by several respondents, both for their function and also for aesthetic qualities (See Figure 16). Interestingly, most participants who praised infrastructure and amenities were from Attard or Marsa, and only one participant was from Qormi. This praise was mostly aimed at UGSs, which had undergone recent refurbishment. This included Ġnien l-Istazzjon (UGS A5) and Misraħ Kola (UGS A12) in Attard and UGS Q14 and UGS Q15 in Qormi, with the latter recently developed. This praise was mainly centred on the surface material, tiling, fencing, and lighting. In UGSs in Marsa, the surrounding fences and walls were also identified as important features preventing anti-social behaviour at night. Amenities such as benches were deemed to be aesthetically pleasing and important.

Participants also greatly valued UGSs with toilet facilities. Several participants expressed the importance of nearby toilet facilities, given their age. The availability of clean toilets increases the time they can spend in UGSs and also provides reassurance that facilities are available. Other participants explained that they also appreciated UGSs with water elements such as fountains, ponds, or water reservoirs.

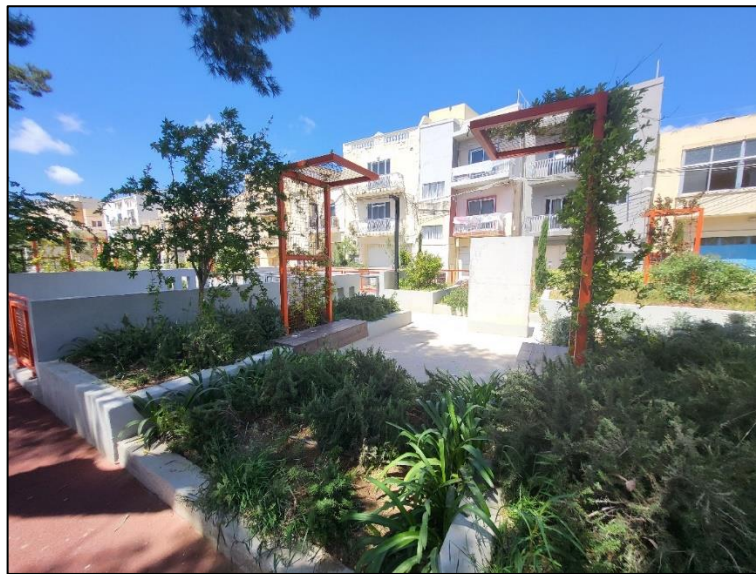


Figure 16: *UGS Q7 is one UGS praised for its infrastructure, including safe pathways, fencing and lighting. Photograph taken by the author.*

Facilities

Facilities were also identified as an important element of some UGSs by Participants 3, 5 and 14. Such facilities included a football field in one UGS (UGS M5) and playgrounds in

several UGSs. Whilst not particularly important for the elderly to use themselves, participants explained that such facilities create an active and engaging environment where there is something to observe in order to pass the time. An interesting example is Ġnien l-Istazzjon (UGS A5), which has recently been refurbished. Its library was praised by some participants as an important facility, providing one elderly visitor with the opportunity to browse books and read peacefully. It also encourages social interaction, enhancing the UGS's overall appeal. While this was a significant feature for some participants, the researcher's observations revealed that very few UGSs offer such facilities.

Well-maintained

Several participants praised various aspects of the maintenance within UGSs, albeit also criticising others (See Subtheme 1.2). The positive perceptions and descriptions came from participants across the three study areas. These nine participants felt that most UGSs are attended to and cleaned regularly. Participants acknowledged that this does not mean litter is not present, as people still litter before cleaning occurs. In fact, the presence of litter was observed in a number of UGSs, during the researcher's observations (See Section 4.1.6).

Design

A number of participants identified and expressed several positive elements concerning the design of the UGSs. In Attard, a number of participants praised the design of the newly refurbished Ġnien l-Istazzjon (UGS A5). This is due to many factors, including the natural elements, such as the flowers and trees, as well as historical and social elements, such as the train station and the public library. The separate playground for children was also identified as an element of good design as it allowed elderly users to choose whether they would like to sit in an area where there is more engagement or in a quieter area. Thus, the design of the UGS allowed for a mix of activities which could take place within the same UGS, with each having a distinct area.

Participant 2 further explained that the refurbished Ġnien l-Istazzjon (UGS A5) allowed visitors to feel relatively detached from the surrounding roads and traffic. Other participants also expressed this as being an essential element of good design. This is allowed by the surrounding walls, buildings, trees, fencing, and the considerable space the entrance design provides. Participant 3 also highlighted how this reassures grandparents visiting with their grandchildren that the children will be safe and will not wander the street into traffic. Other

participants also expressed this notion regarding other UGSs, such as Misraħ Kola (UGS A12) and UGS Q14.

In Marsa, participants also praised the design of some of their UGSs. For example, Participant 15 praised one space (Tas-Samra - UGS M3), which is stepped and connects one main road at a lower level (Triq Diċembru Tlettax) to a street (Triq Stiefnu Zerafa), which is more highly elevated. Thus, one can see the rest of the UGS beneath them from the upper part. This suggests that views may also be an essential element. Due to the small size of local UGSs, as well as local topography, views are lacking in many instances.

Space for children

Participants praised the presence of swings, football grounds and other facilities for children (See Figure 17). This includes spaces in all three localities, such as at Misraħ Kola (UGS A12) and Ġnien l-Istazzjon (UGS A5) in Attard, UGS M5 in Marsa and Ġnien De La Cruz (UGS Q1) and Ġnien Federico Maempel (UGS Q8) in Qormi. Participants 4, 5 and 6 emphasised that these features are important for some elderly, including themselves, as it enables them to experience UGSs with their grandchildren.



Figure 17: *A playground within an UGS. Ġnien Federico Maempel (UGS Q8) is one of the UGSs which provides space for children to play. This is particularly as it allows the elderly to experience such places with their grandchildren. Photograph taken by the author.*

Nostalgia

Some participants from Attard and Qormi, expressed positive perceptions towards UGSs because they provided a sense of nostalgia. Some participants shared how, when they were young parents, they used to bring their own children to specific spaces, recalling the fun they had there. Others described their own experiences as children or youths when visiting the UGS. Participant 3 described how he used to meet at Ġnien l-Istazzjon (UGS A5) with his friends and then follow the train line to St. Aloysius to watch football. Participants also described how the UGSs themselves have changed. All of this suggests that while renovations and upgrades are important, fostering a sense of continuity and longevity is equally essential for creating a sense of place and developing attachment to spaces.

4.2.1.2 - Subtheme 1.2: Negative perceptions

The interviews also uncovered several negative perceptions of the UGSs. These perceptions provide vital insights into what elements of the UGSs in the participants' localities are reducing their attractiveness, quality, and ultimately use by elderly residents. Thus, this subtheme is crucial in identifying critical areas of weakness in local UGSs, which may need further investments and improvements.

Lack of maintenance

The most significant negative perceptions arose from the lack of maintenance of UGSs. Although several participants did praise the maintenance and upkeep of UGSs, their perceptions varied depending on the specific aspect of maintenance being discussed. Participants from all three localities identified areas of maintenance that they felt were below standard. This not only caused safety concerns but also impacted the aesthetic aspects of the UGSs. As one participant explained: "You need upkeep. And I think that's when, if an object is neglected, it becomes an eyesore" [P.11].

Infrastructure maintenance

Several participants discussed the issue of poor infrastructural maintenance within UGSs. Most of these participants were from Attard and Qormi, whilst only one was from Marsa. Participants expressed that whilst newer UGSs were in excellent condition, older ones had become neglected, such that infrastructure and facilities were now visibly experiencing wear and tear, vandalism and the effects of exposure to weather over a long period of time. One participant commented:

It's not just a matter of creating gardens; their maintenance needs to keep being done regularly. They shouldn't be neglected, only to then realise, when it's too late, that what could have taken a day to maintain now takes a whole week. [P.7]

Examples of such criticism included the neglected and broken paving in spaces such as San Anton Gardens (UGS A1), which was particularly criticised, and in Ġnien Tomasso Dingli (UGS A7). These were identified as a potential danger to both the elderly and children. One participant commented:

As a garden (San Anton Gardens – UGS A1), it has remained the same. But I'm telling you, the ground is all torn up. It needs to be fixed. It has to be repaired... For example, when I go, I'm always looking at the ground. Because to trip over something there... it wouldn't take much. And I get scared. I had fallen once and injured my hands, so ever since then, I've remained afraid. [P.5]

Others criticised the neglected state of the ponds in San Anton Gardens (UGS A1), which were described as “disgusting” [P2]. Thus, criticisms were not aimed solely at smaller or less popular UGSs but also at UGSs, which are quite popular. In another UGS in Qormi, Participant 8 spoke about how one particular broken bench was a danger to children and was also unavailable for the elderly to sit on. The participant described how at Ġnien Federico Maempel (UGS Q8), the playground, the tiling and the benches were in a poor and neglected state, often damaged and with bird droppings (See Figure 18):

As for paint, they never repainted it. They painted it once and never did it again. Well, it's a pity, the work gets done once, they open it, and then that's it. Well, there's nothing you can do. And then it just gets worse, right? How long can it last? It's been almost ten years, and they have never given it even a bit of paint. That's how long it's been. [P.8]



Figure 18: Benches observed to be poorly maintained. One bench (a) in UGS A10 (Il-Ġardina tal-Kromb) has been damaged whilst the other (b) is found in UGS Q14 covered in bird droppings. Photographs taken by the author.

Participant 7 also agreed with this, describing how parts of a wooden canopy at Ġnien George Hyzler (UGS Q20) had collapsed and had never been replaced. These examples point to frustration with this particular aspect of UGS maintenance.

Littering and fouling

While participants appreciated the regular cleaning and sweeping of UGSs, they also expressed frustration with visitors who litter or fail to clean up after their dogs. This issue was described by six participants and identified in UGSs across the localities under study. According to participants, fouling detracts from the beauty of UGSs and creates unpleasant odours, making it uncomfortable to sit in certain areas. Irregular emptying of bins for animal waste also led to foul odours, which one participant described as unbearable. In Marsa, for the most part, residents praised the aesthetics and the upkeep of most UGS infrastructure and cleanliness. This is an interesting point given that in the researcher's observations, the UGSs in Marsa held the lowest scores for litter.

Vegetation maintenance

Another aspect often pointed out regarding maintenance was that the plants and trees of the UGSs often lacked adequate care. In numerous instances, participants complained that parts

of the UGSs were allowed to die off due to a lack of proper irrigation (See Figure 19). Three of these participants were from Attard, two were from Qormi, and one was from Marsa. Participant 2 complained: "Go near the garden near the school. The trees are crying out for a bit of water. You look at the soil, it's like here. There's nothing appealing about it" [P.2].



Figure 19: *Poorly irrigated saplings appear to have been neglected and/or abandoned in UGS A11 (Ġardina Pierre Muscat). Poor maintenance with regard to vegetation was a common element impacting participant perceptions of UGSs. Photograph taken by the author.*

These participants described UGSs that, rather than being full of flowers and greenery, were left with bare, dry soil or had become dominated by weeds. This was directed mainly at the smaller UGSs. This was also reported by the researcher in his observations, and in fact, most UGSs scored very poorly with regard to seasonal and high-maintenance vegetation. A sentiment expressed strongly by these participants was that whilst UGS projects start with good intentions and are very beautiful, as the months pass, they become increasingly neglected, particularly regarding the vegetation:

I really love these things. But it pains me to say this, this garden they built here on Triq Diċembru Tlettax, they said they spent half a million to create it... It pains me to say it, but they start off very well [lit. like men]. If you go there today, there's not a single flower. No flowers at all. Just a lot of weeds (See Figure 20). That means they're not taking care of it. They start off strong [lit. like men] and then stop halfway. That's not good, right? ... But there, it almost looks...well, I won't say abandoned,

but almost abandoned... I mean, it's a shame, they spend so much money, and in the end, it all goes to waste. That's not a good idea. [P.15]



Figure 20: *The poor state of vegetation in UGS M5 which has been described above by participant 15. Parts of the UGS are characterised by dried and overgrown vegetation which is clearly in a state of neglect. Photographs taken by author.*

At Misraħ Kola (UGS A12), a participant pointed out that plants and shrubs have been allowed to overgrow, covering the benches and making sitting on them impossible. Trees had also not been pruned in a very long time, and a participant expressed worry that branches could collapse in a storm and damage cars or a person visiting following a storm. Thus, this issue merits further attention, as numerous participants have highlighted these issues in various UGSs within all three localities.

Antisocial behaviour

A second core issue, which was often referenced as contributing to a negative perception of UGSs, was antisocial behaviour within UGSs. This aspect was stressed by one participant in Attard, two participants in Qormi, and all participants interviewed in Marsa. Thus, this is an issue that appears to be more heavily dependent on locality. This was also reflected in the researcher's observations, whereby Marsa scored far worse than the other two localities.

In Attard, Participant 4 complained of negative experiences with youths who would visit a particular UGS (Misraħ Kola – UGS A12) with loudspeakers and music, which would lead

to rowdy behaviour. This would continue until late evening and persist despite several reports and police interventions. As a result, according to the participant, there was dissatisfaction among the visitors, who were mostly people with children or the elderly, and among the people who lived close by. Thus, the UGS became a source of adverse outcomes for the area and was thus perceived negatively. The participant expressed how important it is that certain UGSs are not equipped with more adventurous playground facilities, which can attract youth in their late teens.

In Qormi, Participant 10 recounted experiences regarding a particularly unruly youth who aggressively provoked others, including the participant, by passing too closely to them with a bicycle or scooter or through verbal provocations. These incidents happened at Ġnien Federico Maempel (UGS Q8). It seems that this particular space has developed a bad reputation, as other participants have also provided some negative feedback concerning this space. Participants 9 and 11 both described problems related to drug abuse in the area and how it impacted the public perception of the space.

The impact of antisocial behaviour on perceptions of UGSs was emphasised mostly in Marsa. All interview participants expressed strong concerns. Participants expressed that whilst the UGSs are well-designed and well-maintained (excluding the aspect of vegetation), they are still unattractive due to very challenging social issues and antisocial behaviour. A number of non-Maltese residents frequent several of the UGSs, particularly UGS M5, during the daytime. This has resulted in social barriers between members of the resident Maltese population, a significant portion of whom are now elderly, and the non-Maltese population. Participants described how some visitors sleep in these UGSs during the day, as well as instances of violent behaviour in these UGSs, and thus do not feel at ease visiting these spaces. "Because down here they sleep outside under the trees... Because they sleep outside. A lot of them don't have places to go. You feel sorry for them...And when they fight, there's fighting, and they continue to fight down there" [P.13].

Participants in Marsa also spoke about drug and alcohol abuse in these areas. Whilst the researcher could not observe instances of drug abuse, participants were all in agreement that this was a problem. Signage emphasising that alcohol consumption is prohibited in the area and the presence of CCTV suggests that this is indeed an issue. Some participants also described how specific spaces were fenced and locked during the evening because of the drug abuse, which was taking place. These spaces are therefore regarded negatively. Police

presence is also lacking in the area, as one participant commented: "If they (police patrols) had to pass frequently through that garden...people would frequent it more often, right?... Here (Marsa), there are certain problems that no one in Malta has like them. Here and in Hamrun, yes" [P.15].

Design

Whilst in the previous subtheme, UGS design was praised by participants, this section analyses criticism regarding this aspect. A few residents expressed criticisms regarding UGS design, with two being from Attard, two being from Qormi, and one from Marsa. Participant 2 in Attard stressed the importance of planners ensuring that there is something attractive and something to do when designing UGSs. Thus, he made comparisons between UGSs such as San Anton Gardens (UGS A1) and other smaller UGSs (See also Figure 21):

(In San Anton Gardens – UGS A1) there are freshwater fish, ducks, and of course, there's the palace. But in those gardens that I mentioned, those which are sort of small, there's nothing. Just a few trees [lit. Four trees] planted, and that's it [lit. come on, let's go]... It's like being inside a tub, isn't it? [P.2]

Participant 6 was also in agreement:

The others (the small UGSs), right... They're just patches of land, literally, they were abandoned areas around which short walls were built...They literally put up a short wall to stop the soil from eroding, but you can't... they're not recreational. [P.6]

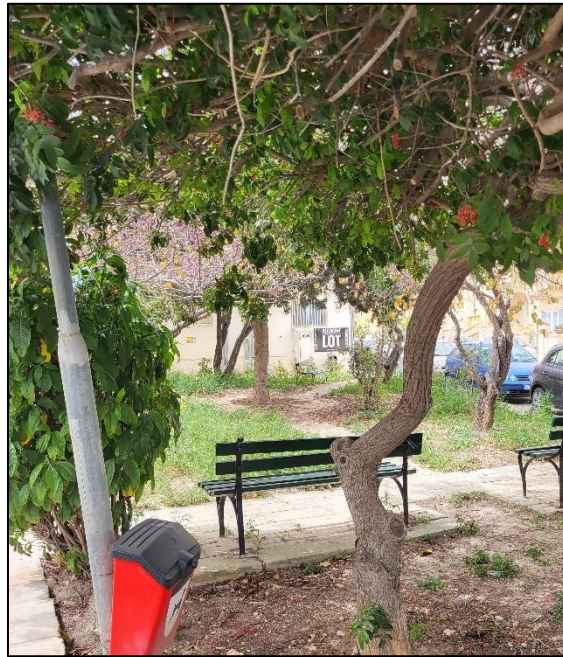


Figure 21: *A typical small UGS - UGS A10 (Il-Ġardina tal-Kromb). Participants 2 and 6 explain that despite the aesthetic value of these UGSs, they are not attractive as they are small and there is not much to do in them. Photograph taken by the author.*

Some participants, two from Attard and one from Marsa, explained that UGSs needed to be larger and better embellished with fountains, pathways, things to observe, etc. One of these same participants also expressed the importance of ensuring that UGSs are truly green spaces. Thus, the participant lamented that most UGSs are simply areas which have been covered in paving and have relatively few soft soil areas (See also Figure 22): "Sometimes, we're going to the other extreme where instead of leaving these areas in their original, virgin state, which is almost better, really...in many areas, we're turning them into paved walkways, covered in concrete" [P.6].

The participant continued to express the view that sometimes, in terms of environmental benefits to the ecosystem and the air quality, it is better to leave a field or a brown field site abandoned rather than develop it into a space with a few trees and a surface consisting primarily of paving:

In my opinion, I think we need more than just covering the ground with tiles or concrete... It's better to leave it as it is. But then, someone has to take care of it. But it's almost better to let wild grass grow rather than have nothing growing at all. ...Abroad, [lit. outside of Malta] I don't even need to tell you... you see these

parks...you see people...relaxing, lying on the grass, reading books. A mother can rest easy knowing that her kids can run around without the risk of falling and hitting their heads on some concrete corner. I think that's the way we need to look at things today. That's when we'd really be protecting the environment, beyond just keeping the trees as green space. Otherwise, this will just turn (the green space) into concrete space. [P.6]



Figure 22: *'Misrah Kola (UGS A12), an UGS which despite possessing an abundance of trees, is also greatly dominated by hard surfaces rather than soil. This has been identified as a shortcoming of certain UGSs by some participants. Photograph taken by the author.*

In Marsa, participant 14 also expressed a similar sentiment, in that the design of the UGSs consisted primarily of soil and trees limited to their areas and concrete paving and benches where the visitor is supposed to stay. This is being identified as a limiting factor as to what one can do in an UGS and takes away from the natural feeling provided by the space:

All it (Tas-Samra - UGS M3) really has are walkways and benches, right? There's a fountain, there's a fountain. Its a lovely, peaceful place. You'd think to sit down with a book and just relax... but we don't really have that culture like they do abroad,

where parks have grassy areas where you can just lie down and take a nap. We don't have that habit—it's not designed for that. The way the Scouts' garden is laid out, for example, it's not meant for that. Sure, it has a lot of olive trees, which is nice, and hibiscus trees...which is great as trees, but in the end, it's just walkways. There aren't those grassy patches where you could spread out a towel, sunbathe, or... [P.14]

In all localities, particularly concerning smaller UGSs, it was mentioned that traffic was a factor which made UGSs less beautiful and less attractive. However, this issue was highlighted the most in Marsa, where several UGSs are along a busy main road (Triq Diċembru Tlettax). Again, Participant 14 commented:

It's not a beautiful environment because you have cars passing by on both sides, right? It's not an open space where you can get fresh air. You have Triq Diċembru Tlettax, god knows how many cars pass through there. Then there's the other road... and you're stuck in the middle of two streets, you see? There's not much pure air. Even, for example, Marsa Sports Club, it's a wide, open space. But I don't go there because I see it as suffocated by traffic. It's completely surrounded by it. [P.14]

The participant also discussed the impact this had on noise levels and compared the UGSs in Marsa to those in Floriana:

Look at Floriana, a town with many gardens... it has spots where the gardens feel almost hidden... quieter. Marsa, on the other hand, no. Marsa is surrounded. Surrounded by traffic. Floriana has many gardens that are not exactly hidden, but they're off to the side. You step inside, and you can't even hear the traffic. [P.14]

4.2.2 Theme 2: Usage of UGSs

After analysing participants' perceptions of their local UGSs, it was also important to examine which UGSs participants use or avoid. Additionally, it was crucial to understand how participants use these spaces and what activities they engage in during their visits. Participants who expressed that they visited UGSs sporadically, occasionally or frequently

were considered as participants that make use of UGSs. Those who have only visited very few times or never were not considered participants who use UGSs. This categorisation was confirmed by participants during their interviews. Many of the sixteen participants interviewed claimed that they visited and made use of UGSs. It is interesting to note that all of the Qormi participants use UGSs. Meanwhile, four of those interviewed in Attard also make use of UGSs. However, none of the Marsa participants use the UGSs. Thus, it is interesting to analyse why there is this discrepancy by interpreting the results of the interviews. The researcher's observations of the UGSs revealed that most UGSs are limited in their potential uses, as they can only accommodate a narrow range of activities. This is attributed mainly to their design, small size, and proximity to traffic and buildings. Comparisons will therefore be drawn between the researcher's observations and the participants' interviews.

4.2.2.1 - Subtheme 2.1: UGS usage

UGSs as a space to relax

Participants had multiple reasons for visiting UGSs. One of the primary reasons described by five of the participants was to relax. This involved simply sitting down on benches and idling or enjoying the greenery of these spaces. Four of the five participants who described this use of UGSs were from Qormi. Participants 9 and 10 described spending time relaxing at the Ġnejnet il-Kan. Karm Grech (UGS Q9). This UGS is quite small (less than 170m²). It consists of a few trees, benches, and a paved surface. The road in front of it is often used by cars. Nonetheless, the participants explained that they were not bothered by this.

Participant 5 in Attard visited San Anton Gardens (UGS A1) to relax. The participant visited San Anton Gardens due to it having a much more natural feel than other spaces due to the greater number of trees, vegetation, animals and even water elements. Moreover, this space offers a sense of quiet and fresh air. These descriptions are also confirmed by the researcher's observations.

UGSs as a space to socialise

Participants also expressed that they visited certain UGSs because they offer the opportunity to socialise with others. Four of the participants who used UGSs to socialise were from Qormi. Participant 9 and 10 from Qormi described visiting Ġnejnet il-Kan. Karm Grech (UGS Q9) in order to socialise (See Figure 23). Here, they waited on benches for friends who came to shop from a small bakery across the street. Thus, people would stop for a short

chat with them before proceeding to the bakery. The participants described only having to sit and wait for a few minutes before a friend visited the space. The participants described that this helps to while away the time and that they meet several people in this manner.



Figure 23: *Ġnejnet il-Kan. Karm Grech (UGS Q9). Despite its small size and proximity to traffic, UGS Q9 was described by some participants as an important place where they could sit and meet with other people to socialise. Photograph taken by the author.*

Participant 8 visits Ġnien George Hyzler (UGS Q20) to socialise. The participant explained that he knows at what time of day a particular person comes to visit the space, and thus, they have made it into a habit to meet for a while and talk. The participant also explained that he lived close by to the UGS and thus enjoyed speaking to people who visit the UGS. Participant 7 also uses this UGS for this purpose and described striking up conversations with visitors to UGSs, including parents who bring their children and other elderly people from the locality. In Attard, Participant 5 explained that a secondary reason for choosing San Anton Gardens (UGS A1) as a space to visit is its popularity, ensuring that there will be people. The participant explained that there are times when she talks to strangers in this space. The participant continued to explain that even when she does not socialise, the space is engaging because a number of people visit, so she does not feel alone.

Using UGSs for physical activity

Some participants mentioned other reasons for visiting UGSs. For instance, some participants explained that they visited UGSs to walk. Three of these participants felt that the spaces themselves were too small to offer meaningful walking opportunities. However, they noted that the journey from their homes to the UGSs provided a substantial walking distance. Some of these participants described visiting various UGSs in their locality as part of a single walk in order to gain physical health benefits. Participant 10 explained his routine as follows:

I take a walk like I told you. For example, I go down there, to the garden they call L-Armier (referring to UGS Q5), where the public restroom is. I go down for maybe fifteen minutes, you know? Then I head up and spend ten minutes near the square, you understand me? After that, I go by 'Kalċ' (referring to UGS Q9) and stay for two hours. After eleven, I head back down and return. [P.10]

Other participants in Attard use San Anton Gardens (UGS A1) and Ġnien l-Istazzjon (UGS A5) to walk. A participant explained that she often visited UGSs when passing through them for an errand and can thus enjoy the UGS landscape and avoid the heavy traffic that sometimes occurs in the surrounding area. Meanwhile, Participants 7 and 8 explained how their poor health prevented them from walking long distances. However, they use the small UGS in their immediate neighbourhood in order to take a daily walk around it and then enter it in order to rest and socialise.

4.2.2.2 - Subtheme 2.2: Barriers to UGS usage

Several participants do not make use of UGSs at all or have used them infrequently. This category of participants amounts to 7 respondents, almost half of the participants. However, as noted previously, two participants who do not use their local UGSs are from Attard, and five are from Marsa. Therefore, all of the participants from Marsa do not make use of the UGSs in their locality. Thus, it is interesting to analyse why these participants do not use the UGSs. All of the participants from Qormi expressed that they occasionally or regularly visit UGSs. However, their input will still be considered for this section. This is because whilst they may regularly visit some spaces, other spaces may not be visited due to barriers or other reasons. Thus, their contribution is also valid and of interest to this aspect of the study.

Antisocial behaviour as a barrier

According to participants, the most significant barrier to visiting UGSs was antisocial behaviour within or around UGSs. As has been described previously (See Subtheme 1.2), several participants shared experiences of witnessing alcohol and drug abuse within UGSs, as well as violent, rowdy or discomforting behaviour from people present in these spaces. This resulted in negative perceptions of these UGSs. This section of Subtheme 2.2 describes how these negative perceptions impact accessibility to UGSs. In fact, the negative perceptions and experiences have turned these UGSs into no-go zones in the eyes of some of these elderly residents. In Marsa, antisocial behaviour has been described as a substantial barrier to access and use UGSs. Most residents expressed that this fear significantly inhibits their access. One example is provided below: "They (elderly residents) don't go out, they're scared. Ask the elderly, they're scared. That's how Marsa is these days, it's a place of fear. You're scared. I told you, we've become slaves in our homes. Slaves in our homes" [P.14].

Another participant described how benches on a route leading to UGSs were removed as these benches were being occupied by people who engaged in harassment and antisocial behaviour. These statements suggest that some individuals perceive these spaces as areas they would avoid. Other remarks indicated that while they might visit, they would typically feel uncomfortable, especially if visiting alone. "Understand me, I can't say these places are no longer ours, whoever wants to go can go freely. But there's that little...you know what I mean? A difficulty, let's call it that" [P.15].

Some also expressed the possibility that the fear itself of harassment, robbery and violence on elderly residents may be exaggerated compared to actual instances of these happening.

Down there (The Marsa core), even when we go to the (band) clubs, we've never had any issues. The worst that happens is with the shop owner, since they serve her, instead of paying, she gives them drinks, and so they get drunk. That's all, they get drunk. And then they fight among themselves. But they never fight with the people of Marsa, not at all. We don't even have thieves around here. There's no real harassment... It's more of a phobia, let's put it that way. That phobia is always there. [P.16]

Thus, this participant identifies the presence of preconceptions and fear on the basis of race acting as a barrier to UGSs, rather than actual instances of robbery and violence on elderly members themselves. Nonetheless, drug or alcohol abuse and homelessness remain as antisocial elements which may discourage visitors. Moreover, some participants have disputed this perception provided by Participant 16. Some participants have recounted stories of unruly or violent behaviour within streets in Marsa, which damaged local property, as well as of robberies on elderly pedestrians for their jewellery. One participant recounted how she had been shocked when a person, whom she described as being under the influence of drugs or alcohol, pushed her, resulting in a cut on her forearm and almost being pushed off the pavement and onto the road. Whilst these instances happened outside of UGSs, participants said they would not visit these spaces frequented by what they referred to as 'foreigners.' Another participant also explained that people asking for money in these areas is also a barrier.

Poor walkability as a barrier

Another frequently mentioned barrier to visiting UGSs was walkability. The researcher's observations already highlighted this as an issue for several UGSs across all three localities. In the interviews, several participants expressed concerns about walkability: three from Attard, three from Marsa, and one from Qormi. Participants criticised the poor condition of the pavements in various parts of their respective towns. One example provided by a participant in Qormi was related to uneven pavements on roads leading to UGSs, mainly due to ramps built to accommodate garage users:

You come across these ramps sometimes... The garages (their ramps) get in the way, and you feel like you're going to trip. They're all uneven like that. Well, you can't say you're walking on a flat surface... You have to be a bit careful because they can make you fall. [P.10]

The participant clarified that this was a very bothersome issue, but it did not prevent him from visiting UGSs. Nonetheless, others expressed stronger views on this issue. Participant 6 was particularly upset about the state of the pavements. The participant explained how, whilst he had little difficulty using the pavements, his wife, who had limited mobility, found it very difficult to use them and, thus, experienced limited access not just to UGSs but to

various parts of Attard. Therefore, the participant expressed his frustration at the state of the pavements:

The pavements have become for people who own garages because they're all up and down (referring to garage entry ramps placed across pavements)... And if you have a disability, a wheelchair, a pushchair, or a carrier, you can't pass... Apart from the fact that many pavements are broken. Pavements really annoy me. They annoy me a lot. Because pavements are for pedestrians. [P.6]

A participant in Qormi also expressed the need to adapt due to the state of the pavements:

You have to be careful. Again, we (the residents) know where the narrow pavements are. I know what's coming, so sometimes you take a longer way. You say, 'I'll go through the alleys and avoid the narrow pavement,' and you go down and up through the back road. That's because we know the whereabouts. There are streets where the pavement isn't even a foot and a half wide because the road is narrow, and cars still have to pass. [P.11]

It is important to note that while participants described the poor state and quality of the pavements and the overall walkability of their localities as barriers to accessing UGSs, none attributed this as the sole or even the main reason for never or rarely visiting UGSs. This was mostly due to other factors, such as the social barriers present in certain UGSs and other factors that shall be described in this section. Nonetheless, it is making accessibility more difficult.

Distance as a barrier

Another barrier mentioned and described by some participants was that of UGSs being a considerable distance from their place of residence. This was an issue for two participants in Attard, two in Qormi and one in Marsa. Given mobility issues as well as the compounding effects of poor walkability levels in some areas, a number of elderly persons felt that certain UGSs within their locality, which they desired to visit, were too far away for them to visit. Thus, taking the example of Marsa, one participant commented that this was a general

problem in Marsa: "Everywhere you go, the distances are big. For the elderly, the distance is too much" [P.16].

One participant commented that this has resulted in elderly people mostly visiting the UGSs which are nearest to them, regardless of their actual attraction to these spaces. Others will prefer not to visit at all. In cases where the elderly can drive, one participant suggested that since they are using their car, they would prefer to seek other places outside of town rather than an UGS within their locality.

Traffic as a barrier

A further barrier to visiting UGSs was the presence of traffic around the UGS. This factor heavily discouraged visiting UGSs and walking in certain areas. This issue was described as a barrier twice in Attard, by two participants in Marsa and one in Qormi. Taking the case of Marsa, where there are very busy roads constricting access to UGSs, one participant explained the situation as follows:

Now, the people of Marsa have always had gardens. They have Spencer Gardens (UGS M4) where they are doing some renovations. Then there's the garden here, the belvedere (Referring to UGS M3). Those nearby... and then where Marsa Sports is under the bridges, you go up there, there is something, but there's not even a zebra crossing to get to them. So... mention that there's no access to them... The elderly won't go where the cemetery is, the elderly won't go down to Spencer Gardens (UGS M4) because Spencer Gardens you have to cross (the busy Triq Diċembru Tlettax). You tell me, "There are the bridges." These people are no longer able to (cross) the bridges, people... there's not even a zebra crossing. [P.16]

The participant continued to explain how the infrastructural solutions implemented to circumnavigate the accessibility problem posed by heavy traffic were not effective, particularly for the elderly: "You have to cross over the bridge today... As long as there's no zebra crossing, people aren't going to climb seventy steps to cross over the bridge" [P.16].

In Attard, residents described that the situation varies according to where one is. For example, near Misraħ Kola (UGS A12), residents did not describe traffic issues, except for

one particular road they preferred to avoid. Residents described heavy traffic near the school but mentioned taking alternate routes to avoid the traffic. One participant described how the traffic had impacted her access to UGS:

Since I've aged... I'm sixty-six now... my heart skips a beat, and I get scared of the traffic. I've become scared, really...and especially, for example, if we're walking and there's a side street... I see a car coming... the fear...because I start to worry it's going to come towards me...too much really. I wish it wasn't like this, but this is how I've become. [P.5]

In Qormi, Participant 11 expressed that she does not feel the roads are safe from traffic for elderly residents. Nonetheless, she also explained that most elderly residents are now used to this and hardly recognise this as a problem. Instead, it has become an ingrained reality that they accept as a norm.

I can't say that there are areas that are safe because the cars pass right by you. The thing is, if someone loses control, they could drive straight into you... But I also think that we are so used to it, so accustomed, that we don't always take full notice. It's like we gauge it by instinct. Now you stop and then continue walking, then you give way to the cars. Because they're trained here. [P.11]

Encroachment in UGSs

Two participants highlighted the issue of encroachment. Participant 5 from Attard described the case of a local social club (*kazin*) setting up tables within an UGS. The participant explained the impact as follows:

Here (UGS A9 – Ġnien Hal Warda), I'll tell you the truth, since they built the club, it seems like they've turned it into their own place. Tables, chairs, you know? And it seems like they made it private for themselves, you know? So we don't go there much. Because in the evenings, especially on Saturdays, it's like that, a bit chaotic, they eat something and even cook food, you know? [P.5]

This is also the case in another UGS (UGS A7 – Ġnien Tomasso Dingli) in Attard, where a cafeteria sets up tables and chairs within parts of an UGS. However, whilst some participants acknowledged that this should not happen, they did not react strongly to this as a barrier, with one participant explaining that since people are not attracted to that particular UGS, they do not mind too much. It is also important to note that Participant 6 from Marsa commented that she did not feel comfortable visiting a particular UGS (UGS M7), which was predominantly occupied by men from nearby shops and bars. It is thus important to keep in mind the potential impacts of location, nearby influences, and various social factors.

Personal preference as a reason for not visiting UGSs

Several participants also expressed personal reasons or preferences for not visiting local UGSs. Notwithstanding other reasons they provided for not visiting UGSs, four participants stated that they often find themselves too busy to visit these spaces, regardless. Three participants explained that they prefer to spend their time on activities such as local ‘tombla’ (bingo) or attending local activities at day centres open for elderly residents. Three participants do not visit UGSs because they feel that there is not much to do within these spaces and that they would easily become bored. One participant described it as follows:

It's like when you get older, you're not going to go to the garden. When I had the kids, I would take them to the park. When they were young, I used to take them. But now, what am I going to do? Just sit there and watch the birds?... I'd rather stay next to the television instead. [P.12]

This also reveals a certain attitude about the function and role of UGSs. Meanwhile, another also expressed his sentiments similarly: "No, it gets tiring. How long can you stay like that on a bench, like an idiot sitting alone?" [P.2]

Evidently, these spaces fail to engage some participants and are not sufficiently attractive for certain individuals to use them. Additionally, a few participants remarked that UGSs are primarily seen as spaces for children, rather than for adults and that there was now no reason for them to visit.

4.2.3 - Theme 3: Perceived benefits of using UGSs

Several participants expressed their views on various benefits that they obtained from visiting UGSs or from having UGSs in their neighbourhoods. However, there were others

who did not report any benefits or experienced very little benefit from the usage or presence of UGSs. Thus, this section analyses the responses of participants in this regard. Such analysis is essential to better understand the roles and functions of UGSs in our communities and how they have impacted the participants' lives.

4.2.3.1 - Subtheme 3.1: Physical health benefits

A few participants described obtaining physical health benefits from visiting UGSs. Two of these residents were from Attard, whilst four were from Qormi. None of these respondents were from Marsa. As noted before, none of the participants in Marsa visit their local UGSs. One participant who felt that UGSs provided health benefits explained that, in her view, such spaces are becoming increasingly important for elderly residents to keep physically healthy:

I go on walks, yes. I believe that people frequent such spaces, particularly because, fortunately, walking has become an integral part of maintaining one's health. It has almost become a prescribed activity. Individuals engage in morning walks, often joining in small groups (of) two or three people, and make use of these areas. [P.11]

Participants with limited mobility noted that the smaller UGSs near their homes greatly benefited their physical wellbeing (See Figure 24). They found that even one or two short walks within these spaces provided valuable opportunities for movement and exercise. Such spaces are safe from traffic and hurried pedestrians, and are calmer and more peaceful.



Figure 24: *An UGS (Q 20) with a well-maintained walking path. Two participants with poor mobility levels felt that small UGSs such as this one were important to providing a safe environment in which they could go for a short walk. Photograph taken by the author.*

Participant 1 and Participant 12, regarded the UGSs as suitable for improving the physical wellbeing of elderly residents despite not using these spaces themselves. Additionally, most participants believed that UGSs contribute to clean air in their locality. Thus, participant 5 explains:

Certainly, certainly. It is beneficial to go outside and get some fresh air. It is not the same as being on a busy road, surrounded by traffic and diesel fumes. At least when you go to a garden, you can breathe cleaner air. Certainly. Even a tree-lined street provides a different experience. [P.5]

Participant 6 also adds: “Because, after all, trees are our lungs, aren’t they? However, for the local community, a place that was once suffocating due to dust and pollution is now offering a breath of fresh air”. [P.6] Thus, despite not being regular visitors to these spaces, these participants still felt that the UGSs provided important benefits.

4.2.3.2 - Subtheme 3.2: Mental health benefits

While only some participants expressed the view that they gained physical health benefits from the UGSs, many expressed the opinion that they perceived mental health benefits. These include relaxing, destressing, spending time in peace and quiet, or reflecting. Five participants expressed how UGSs are important spaces for the elderly to relax due to their limitations in walking very long distances and across difficult terrain in the rural countryside. This is especially true for those participants who emphasised that they cannot drive. Others felt that driving had become too stressful and would rather avoid it when possible. Thus, UGSs, in their locality, offer spaces where they can relax (See Figure 25).



Figure 25: Benches surrounded by trees in UGS Q1 (Ġnien De La Cruz). According to some participants, UGSs can help create zones of relative peace and tranquillity in contrast to the busy urban nature of their surroundings. Photograph taken by the author.

Participant 10 described how he enjoyed the quiet nature of the UGSs and thus continued to visit UGSs for those reasons. Participant 6 emphasised the importance of UGSs for those who do not have private gardens or yard spaces. Even participants who did not visit UGSs had positive views on the mental benefits these spaces offer to the community. In fact, others highlighted how UGSs are important for mental wellbeing, not only for those physically present in the spaces but also for those passing by or living nearby:

Well, even the fact that you go outside and see greenery. Granted, most of us (in the neighbourhood) have our own gardens, but still, when we go for an evening walk, isn't it much better to walk through gardens rather than along the main road, where all you encounter are cars and nothing else? [P.6]

4.2.3.3 - Subtheme 3.3: Social wellbeing benefits

It has already been described how a number of participants reported using UGSs in order to socialise (See Subtheme: 2.1). This subtheme (Subtheme 3.3) focuses more specifically on the social wellbeing benefits that some participants have described themselves obtaining by visiting UGSs. Socialising is therefore a common element in both these subthemes.

Describing these social wellbeing benefits, some participants explained that these spaces are essential since the participants feel they help them pass some time away and help combat loneliness. Participant 4 in Attard, who has an UGSs close to her home, described the UGSs as a space enabling her to encounter her neighbours and become closer to them:

Yes, people from around here come here (in the UGS), and sometimes you can tell that a person lives in the area because you see them here...To be honest, sometimes you don't even know your next-door neighbour. But if you've seen someone here, greeted them today, saw them again the next day, and exchanged greetings, you understand? [P.4]

Participant 7 in Qormi described how UGSs are spaces where conversations with random strangers can occur. On the other hand, even simply observing people helps some of the participants feel less alone and while away the time.

There are (always people) here (in the green space), always. Elderly people and children. I once admired a little girl... the fountain was running, and she kept crossing from one side to the other, in the summer... and there was someone looking after her as well (the girl)... and she kept crossing back and forth, and I admired her and enjoyed watching her. She was really small... And yes, there are people here.

Young women, married couples. [P.7]

This same person has also developed a sense of attachment and purpose from this UGS as he often feeds the cats, cleans up litter, and helps maintain the area as best he can. This has helped connect with others in the community. Participant 8 also explained that he grows beans in the area, which has also served as an opportunity for him to socialise and build ties with people within the community. "Yes, sometimes there are even people who come to

water the plants, and they like talking to me, even those who come to water the plants near me" [P.8].

He also recounted how, since he lives close to the UGS, he often befriends visitors and recounts how, even just before our interview, he had been speaking to some people who had visited the UGS.

Yes, of course. They came, and now they have left. I offered them a cup of coffee. I told them, 'If you want coffee, come and have some.' I told them I could bring them coffee, and they thanked me very much and complimented me on how well I keep this place. These were people I didn't even know, you see. Just by offering them something. Even those who come to clean, I give them a cup of coffee. [P.8]

4.2.3.4 - Subtheme 3.4: No benefit obtained from visiting UGSs

Several participants did not feel they experienced benefits from the UGSs. This was mainly due to personal reasons and preferences, or the fact that the UGSs were not attractive or adequate enough. Thus, a mixture of preferences, qualities, and barriers accounts for these cases. Several participants do not perceive themselves to gain physical health or social wellbeing benefits from the UGSs, half do not perceive themselves to receive mental health benefits. Interestingly, aside from benefits for themselves personally, a few participants do not feel that UGSs are adequate to provide physical health benefits to elderly residents in general. about half do not feel they are adequate to provide mental health and social wellbeing benefits to the community. This section within this subtheme is centred on the analysis of these perceptions, as opposed to the previous sections which analysed the perceived benefits.

Lack of physical wellbeing benefits

Regarding the physical health aspect, six participants described UGSs as being too small to improve their physical wellbeing effectively. These were often participants who had good levels of mobility, as described by themselves. Participant 6 in Attard said that the issue of small UGSs meant that he, like many others, preferred to carry out their physical activity on the streets rather than at UGSs. This means that in certain cases, one has to be wary of traffic and has to, sometimes, endure the stress caused by this traffic. Thus, the participant argued for the importance of larger UGSs. Numerous participants preferred walking along the town

or from one place to another rather than at UGSs. However, one must note that these were elderly participants with good mobility levels.

Most participants were satisfied with the quality of air within their UGSs. However, in cases of small UGSs which were beside busy roads, there was negative feedback from a number of participants. Participant 14 in Marsa also felt that the UGSs in Marsa suffered too heavily from pollution. However, his opinion was not shared by other participants in Marsa, who regarded them as spaces which were not much affected by this pollution.

Lack of mental wellbeing benefits

Whilst UGSs have been shown to provide benefits related to mental wellbeing, there was a minority of differing opinions. Participant 11 accepted that the UGSs provide some benefits in terms of mental wellbeing. However, the participant had doubts about the significance of this, particularly in the face of much larger problems and pressures. The participant felt that rather than the greenery and quietness of the UGSs, it was more the social aspects that needed to be emphasised in terms of providing mental health benefits:

More so than gardens, elderly people are more likely to have mental health issues if their children don't visit them. Now, whether with or without the tree, if my daughter doesn't come to visit me...do you know what I mean? [P.11]

Moreover, the participant explained that people in Qormi were used to not having UGSs and access to them, and thus, they are not any more stressed or anxious due to this fact, but rather take it as a norm. Participant 15 in Marsa also expressed the view that the people had very little attachment and ownership to their UGSs and did not care much for the benefits they provided. Nonetheless, Participant 13 in Marsa claimed that her residence and its surroundings provided her with a space for her mental wellbeing. "The gardens are beautiful. But here (at home), I have my peace. I have the terrace. The school is on this side. I have three terraces here" [P.13].

Several in Marsa shared this opinion. Participant 14 commented on the importance of greenery, access to sunlight, and open space. Whilst the participant does have his own private space, heavy construction of neighbouring buildings means he no longer receives adequate sunlight to grow plants as he wishes. The participant also argued that local UGSs are insufficient to replace the space he feels he has lost:

Yes, they made me into a tower, they buried me... I used to plant (in the terrace), for example, during April, May, (it would be) full of flowers and so on. (Now) I can't plant even a mint, a mint or parsley because there's no sunlight. Nothing, nothing, nothing, I don't have sunlight now. Before, I used to enjoy it a lot... now, nothing. I'm telling you, I can't even grow a parsley leaf, nothing. [P.14]

Lack of social wellbeing benefits

Half of the participants felt that the UGSs did not offer much in terms of benefits related to socialisation and building community ties. There are various reasons why these participants expressed that they do not feel the UGSs provide them or the community at large with these benefits.

In Attard, two participants expressed the view that the main reason for this sentiment is that, for the most part, UGSs in the area are not usually visited. Participant 2 explained:

I remember before, we used to come down here next to the church (UGS A7 - Ġnien Tomasso Dingli), someone would come, maybe a bit younger than me, you'd sit and chat, do you understand? A bit about politics, a bit about hunting, a bit about this, a bit about that. Today I'm telling you, (there's) nothing. You're afraid to go outside... Sometimes I go, I say 'I'll go a little to the school garden' (Ġnien Palma - UGS A8). You don't see anyone. Silence. Like I told you, how long will you sit there alone? It's like you're a soul, or a ghost. [P.2]

Another participant concurred with this notion:

In the summer, it's not the first time that we would go out in the evening, around nine, nine-thirty, and think, 'we'll go for a walk'. We'd stop a bit next to the school (Ġnien Palma - UGS A8), just sitting there, we'd wait for a quarter of an hour, then you start to feel bored and anxious because you don't see anyone. In the summer, in August and July, you don't see anyone. Here (Attard), this is the problem you see. Here, it's grown, the people who came, I don't know if they came to stay for the

peace, or maybe to say that they came to live in H'Attard. But otherwise, you don't see anyone. [P.3]

The notion expressed towards the end is also shared by other participants in Attard, who feel that newcomers, both foreign and those from different parts of Malta, failed to integrate into the community and become involved in community life. Thus, they do not feel that they can encounter the 'newcomers' and that there is little to tie the original, now elderly residents to the incoming population, which arrived with the expansion of H'Attard. In Qormi, Participant 11 downplayed the role of UGSs in providing social cohesion and creating spaces for socialisation. The participant claimed that in this locality, this role belongs to other spaces and institutions:

Hal Qormi, San Ġorġ (referring to a part of Qormi), the sense of community exists. So, to socialize, there's always something happening. A festival, a procession, meetings of elderly groups, it's like going to the day centre. It's like there's no need for it. You're not yearning for it. You don't need a place. They seek company, but it doesn't have to be in a particular location. [P.11]

The participant continued to explain that elderly people love meeting in public spaces and socialising, but according to the participant, this can be just about anywhere. In her view, participants do not necessarily seek UGS to socialise and do not pick and choose from amongst UGSs to determine which is of the highest quality.

4.3 Conclusion

This chapter has described the main findings from the observations and from the interviews. These findings have provided the researcher with key insights as to the experiences and perceptions of the participants in the area under study. These results highlight key themes related to participants' perceptions and usage of UGSs as well as themes related to the accessibility and services derived from UGSs. In the following chapter, these findings shall be analysed further, in light of the academic literature.

Chapter 5: Discussion

This chapter analyses the findings presented in the previous chapter by situating them within the context of both local and international literature. It compares the results obtained through observations and interviews and also compares the findings across the three localities under study. By highlighting the similarities and differences between the localities in relation to the research questions, the chapter sheds light on unique local nuances while also identifying common issues and sentiments that span across the localities. Through these comparisons and by integrating the findings with broader literature, this chapter addresses the research questions.

5.1 - Research question 1: Are there differences in the quality of UGS provision between the localities under study?

Local literature on this research question is sparse, with few studies conducted on the subject in any of the three localities. Consequently, comparisons between localities in this chapter are based primarily on the observations and interview results detailed in the previous chapter. The literature highlights that the provision of UGS depends on several factors, including availability, attractiveness and accessibility (Biernacka & Kronenberg, 2018). This study has identified 17 spaces as UGSs in Attard, 9 in Marsa and 23 in Qormi. In terms of size, most of the UGSs identified in this study are relatively small, with minimal variation observed across the localities. Attractiveness and accessibility were assessed through observations and interviews.

The results from the observations have shown that the three localities do not demonstrate any large differences with regard to the quality of the UGSs that they host. Thus, it is crucial to discuss any common strengths and weaknesses. With the exception of a few outliers, most UGSs obtained fairly homogenised scores. This is in contrast to the findings of Portelli et al. (2020), who found that Attard scored higher than Qormi and Marsa on an environmental justice index. However, this score was not only determined by UGS provision but also by several other environmental and social factors. Therefore, only a limited comparison can be made. Nonetheless, the study by Portelli et al. (2020) found that all three localities suffered from environmental burdens, demonstrating that Qormi, and Marsa in particular had far greater challenges than Attard. Accordingly, the observations in this dissertation showed that UGSs often obtained relatively low scores, reflecting an overall poor quality of UGS by the standards of the RECITAL tool (Knobel et al., 2021).

The poor quality observed in local UGSs is not altogether surprising given that local studies find that UGS planning and design have failed to provide UGSs which contribute to and advance the various benefits associated with these spaces (Scheiber & Zucaro, 2023). In fact, the recommendations and standards set by international literature with regard to good UGS provision are often missing or lacking in the observed UGSs (Anaqami & Santosa, 2021; Enssle & Kabisch et al., 2020; Loukaitou-Sideris et al., 2016). Thus, one may understand the mediocre observation scores obtained in UGSs across the localities.

Studies have shown that UGSs require green and natural elements such as trees, flowerbeds and other vegetation in order to be attractive and provide ecosystem services (Wen et al., 2018; Loukaitou-Sideris et al., 2016). Whilst trees were often present, the observations report that other forms of vegetation scored very poorly across the study. Indeed, observation scores indicate that these were either less present or poorly maintained. This has also been confirmed in other academic studies (Scheiber, 2021). It is also essential for noise levels to be low in UGSs, particularly if aimed at attracting elderly visitors (Wen et al., 2018). Observations show that UGSs have relatively mediocre scores for noise levels, with the most significant observed sources of noise pollution being nearby traffic and, in some cases, construction. For better suitability for the elderly, local UGSs should also seek to provide shelter and shaded areas, as these were also lacking in a number of UGSs, particularly those which did not have trees or only young trees (Tan et al., 2019). Unfortunately, regarding both amenities and facilities, UGSs were poorly equipped and furnished in terms of fountains, picnic tables, toilet facilities, and so on. This is, therefore, something which is also important to improve (De Oliveira Chuna et al., 2012; Aspinall et al., 2010). Seating and benching were fairly well-maintained, but a number of UGSs did not have any such seating, which is particularly important for the elderly (Ottoni et al., 2016). Accessibility is also an essential element cited in the literature, and it requires improvement across all three localities (Biernacka & Kronenberg, 2018).

UGSs obtained good scores with regard to safety, and based on the observations, this is one of the better aspects of UGSs in the areas under study. Safety is a critical component in the provision of quality UGSs, encompassing both protection from crime and hazards such as traffic or injuries caused by, for example, poor paving. This is frequently highlighted in the literature (Loukaitou-Sideris et al., 2016; Schmidt et al., 2019). While the condition of the paths was generally good, there is significant room for improvement in some cases. This is particularly relevant given the emphasis placed on path quality in the literature (Loukaitou-

Sideris et al., 2016; De Oliveira Chuna et al., 2012). Scheiber and Zucaro (2023) argue that improving UGS quality requires prioritising these spaces in urban planning and recognising them as essential tools for addressing climate and social challenges. This also involves creating networks linking UGSs together and also involving residents in the planning and design of UGSs.

5.2 - Research question 2: How do elderly residents perceive and use the UGSs in their locality?

The findings revealed that participants' viewpoints were largely divided into positive and negative perceptions of UGSs, often depending on the specific UGS under discussion. Participants expressed overall positive perceptions of certain UGSs, while holding negative perceptions of others. Additionally, perceptions were influenced by the specific aspects being considered. The analysis identified numerous aspects on which participants held either strong positive or strong negative views. This will be discussed in view of the literature.

5.2.1 Aesthetics

One aspect that participants generally viewed positively was aesthetics. Several participants noted that the UGSs in their locality were beautiful, even if some did go on to voice negative perceptions with regard to maintenance or size. Trees, flowers and vegetation, in general, were the most praised aspects of UGSs. This is consistent with the findings of Loukaitou-Sideris et al. (2016), who also found that elderly visitors place great value on the presence of trees and vegetation. The importance of vegetation and trees in creating attractive UGSs has also been emphasised in other studies, such as that of Kuo (2015). Studies have found that the presence of trees and other vegetation affects perceptions of aesthetics more for elderly users than for other demographics (Palliwooda & Priess, 2021; Qin et al., 2013; Sang et al., 2016). Participants held a greater appreciation for native trees, although some were enthused by the variety of alien species at San Anton Gardens (UGS A1). Accordingly, studies have shown that the diversity of species and of colour in vegetation are important in determining perceptions of aesthetics (Hao et al., 2024).

In the observations, the dimension 'seasonal and high-maintenance vegetation' obtained low scores across the three localities. Bush cover and grass cover scores were also low overall in all three localities, including vegetable and aromatic gardens. Participants described that the problem stems from both poor maintenance of existing vegetation and poor design, which prioritises hard surfaces and takes away any natural character from the space. As a result,

some participants felt that these UGSs were not sufficiently green. Some participants even compared them to UGSs outside of Malta, particularly those with larger areas of soft soil surfaces. Where soft soil areas were present, they were often cordoned off by paving or low walls, so that access to the soft surface was prohibited. Very little bush cover or flowerbeds were present in UGSs. Lack of greenery and the dominance of hard surfaces in open spaces have also been identified as an issue by other academics in Malta (Scheiber, 2021). UGSs which did have good scores for high-maintenance vegetation, such as San Anton Gardens (UGS A1) and Ġnien l-Istazzjon (UGS A5), were praised by participants for these elements. Thus, it is unsurprising that participant perceptions correlate with the observed state of the vegetation in UGSs and the international literature in that maintained, greener spaces produce better perceptions.

Five participants also recognised the contribution of animals to the aesthetic value of UGSs. This is consistent with international studies, which found that visitors regarded UGSs with high levels of biodiversity as more aesthetically pleasing (Gunnarson et al., 2017). Other studies also praised the importance of a more natural, wild-like appearance in certain spaces (Palliwođa & Priess, 2021). It would benefit the attractiveness of UGSs if more animals were present. Aesthetic features such as fountains and ponds, when present and well-maintained, were consistently praised by participants. Very few participants complained that UGSs did not feature any blue spaces, an element often identified by international studies as a crucial contributor to UGS aesthetics (Biernacka & Kronenburg, 2018; Loukaitou-Sideris et al., 2016). Participants also did not make any comments regarding the absence or limited amount of artwork, decorative features and infrastructure noted during the observations. This is very different from the findings of the international literature, which shows that public arts are important in the improvement of urban spaces particularly when placed within UGSs (Dehove et al., 2024). Thus, the contrast emerges between the mediocre results for aesthetic elements during the observations and the positive feedback from participants on this dimension. This could be an indication of the reduced importance of features such as art or blue spaces in the eyes of the participants, in contrast to the esteem demonstrated for trees and vegetation. It could also be an indication of potentially low expectations as to what makes an UGS aesthetically beautiful.

5.2.2 Infrastructure and amenities

Several participants stressed the importance of good infrastructure, facilities, and amenities, praising the UGSs that provided them and criticising those that did not. This included the

provision of walkable surfaces, benches, lighting and secure boundaries from traffic. Thus, many of these items praised by participants were identified as contributing to making UGSs age-friendly. This aligns with international studies highlighting the importance of such features for the elderly, who might otherwise feel disinterested in or excluded from these spaces (Onose et al., 2020; Ostoić et al., 2017; Perry et al., 2021). With regard to surfaces, both the findings and the literature have demonstrated mixed perspectives. Some international studies describe a preference for soft surfaces amongst elderly visitors (Macháč et al., 2022), and others find a preference for more walkable, hard surfaces (Miralles-Guasch et al., 2019). In these studies, it was mostly elderly users with mobility issues who described a preference for hard surfaces. In the current study, participants who did have mobility issues emphasised the importance of safe walking surfaces, but some also expanded on the need for greener spaces. Several UGSs were criticised for lacking toilet facilities, a feature whose importance to the elderly is also emphasised in the international literature (Onose et al., 2020; Ostoić et al., 2017; Perry et al., 2021).

5.2.3 Size

One further weakness of the UGSs in the areas under study, which participants highlighted, is that their design limits the degree to which participants can feel detached from the surrounding urban environment, including traffic, buildings and other pedestrians. This was particularly addressed at smaller UGSs. Smaller spaces were viewed negatively by several participants, particularly in Attard. This may be because, in Attard, participants found it easier to compare the smaller UGSs with the much larger San Anton Gardens (UGS A1). Participants who criticised smaller UGSs felt that there was not much to do in these spaces, with some describing that they felt silly sitting alone in these small spaces, or that they got bored easily. In Attard, some participants noted that very few people visit these spaces and therefore, in their view, these spaces are not suitable even for socialising. However, international studies have shown that smaller UGSs are not necessarily viewed negatively, especially by elderly users. In fact, due to limited mobility, elderly residents are less likely to require larger spaces (Onose et al., 2020). A study found that most elderly users were much more interested in the UGS's ability to provide much-needed natural elements within the urban environment rather than its actual size (Palliwoda & Priess, 2021). Another study found that for elderly users, perceptions of safety, reduced noise levels as well as the opportunity for social interactions are the three crucial keys to promoting positive perceptions of smaller UGSs (Wang et al., 2022). Therefore, local smaller UGSs are less

likely to be perceived positively because, by and large, they do not possess all of these qualities.

In Attard, a number of participants felt that these spaces do not provide opportunities for social interaction, are not sufficiently detached from the urban environment and do not possess sufficient vegetation. Meanwhile, in Marsa, participants do not perceive these spaces to be safe. Noise levels in these smaller spaces may be high due to their proximity to nearby roads. Therefore, modifications should be considered based on international studies and local residents' feedback. For instance, Gozalo et al. (2019) suggest modifying the surrounding road functions to reduce noise levels and adding enhanced security features, such as security personnel, in areas deemed less safe.

On the other hand, there were instances, particularly in Qormi, where smaller UGSs were perceived positively. However, in such cases, these spaces possessed some of the required attributes, particularly because they allowed participants to socialise. This was largely achieved due to the strategic positioning of certain UGSs near places which elderly residents frequent, and also because of self-reported high levels of social cohesion in the locality. Indeed, studies have shown that elderly individuals who report higher social cohesion with their community are more likely to visit UGSs (Enssle & Kabisch, 2020). Thus, the promotion of social cohesion through more walkable, safer streets and community activities is also desirable to promote the usage of UGSs.

5.2.4 Space for children

While some international studies have highlighted noise from other visitors, including children, as a concern for elderly users (Gaikwad & Shinde, 2019), this issue was not raised by any of the participants in this study. It was only in the case of antisocial behaviour (from teenagers) that individual participants in this study highlighted any issues related to noise from other users. Participants felt that children's presence and play in the UGSs added engagement and activity to the spaces. This aligns with studies advocating for more interactive and engaging environments for elderly users (Gardner, 2011; Zhang et al., 2023). In fact, a number of participants only visit UGSs to accompany their grandchildren and nephews. Other participants regard UGSs entirely as spaces for children and feel little point in visiting UGSs without children. Observations from this study also attest to this, with most UGSs' potential usage being primarily centred around the conservation of biodiversity, and promoting children's play and informal games. Other activities, such as walking, enjoying

the landscape, relaxing and social activities, received relatively poor scores on the observation tool. This highlights the need to enhance further UGSs with amenities that engage elderly visitors. For instance, a study in Romania found that elderly visitors often frequented UGSs to play chess, as many of these spaces provided chessboards (Onose et al., 2020).

5.2.5 Maintenance

Participants generally perceived UGSs as well-maintained, noting that sweeping and bin emptying occurred regularly. Observations confirmed that, on average, UGSs in Attard and Qormi were well-kept, although litter in certain areas still negatively impacted the scores. UGSs in Marsa had somewhat worse scores for littering, yet perceptions were still positive. Despite relatively positive perceptions on this matter, participants did hold negative views with regard to other aspects of maintenance. Several participants complained that vegetation was very poorly maintained, resulting in certain UGSs being described as “semi-abandoned”. This is reflected in poor scores obtained from the observations. Others also felt that infrastructure such as paving, benches and structures within the UGSs were also poorly kept. This was less clear in the observations, and the scores reflected that, on average, UGSs had relatively good infrastructure. Nonetheless, UGSs with poor infrastructure were observed. This is concerning given that poor maintenance has been shown to greatly impact perceptions and usage, as well as increase safety concerns amongst elderly users (Kimić & Polko, 2022). The challenges of maintaining UGSs have been recognised in other local studies, such as Scheiber (2022). Local academics have also discussed the need for maintenance interventions to be more frequent and consistent rather than one-time interventions (Camilleri, 2022). Another study has suggested that involving residents in both the planning of UGS and their maintenance will result in more community ownership of the UGSs and, thus, better upkeep (Suomalainen et al., 2022).

5.2.6 Nostalgia and sense of place

A study found that nostalgia helps people form bonds with a place and that nostalgia also positively impacts people’s views of the landscape and environment around them (Yan et al., 2023). Preserving such spaces is crucial as they contribute to how elderly individuals feel about their neighbourhoods and communities. More specifically, this affects their satisfaction levels and their attachment to their neighbourhood (Sun et al., 2020). In turn, this impacts their mental and emotional wellbeing. Thus, it is a positive result that several

participants in this study identified nostalgic elements in UGSs within their localities. Urban planners should consider such important elements when renovating and refurbishing UGSs, ensuring that these elements are not lost. Other studies have advocated preserving nostalgic elements in abandoned spaces and incorporating these into the renovated space's new function (Alshamari, 2022). This could include old buildings, monuments and artworks incorporated into new UGSs.

5.2.7 Antisocial behaviour

One important element that deeply impacted participant perception of UGSs was antisocial behaviour. As has been demonstrated in the results, negative perceptions as a result of antisocial behaviour mainly emerged from participants in Marsa. However, they were not completely absent in other localities. Fear of crime and antisocial behaviour in UGSs is also a prevalent issue in several foreign cities, resulting in a lack of access and in most cases, environmental injustices (Williams et al., 2020). Most participants in Marsa and some in Qormi described antisocial behaviours and their impact on the participants' esteem of the UGSs. Studies suggest that improving environmental factors such as lighting, maintenance and cleanliness, as well as security patrols and CCTV, help to improve these perceptions (Ceccato & Bamzar, 2016).

Other forms of behaviour which may discourage UGS usage were noted during the observation phase and also described by the participants in Marsa. This included people sleeping outdoors and loitering. However, these were not considered by the adapted RECITAL tool. Thus, these behaviours were not reflected in the observation score. These behaviours can easily cause unease amongst elderly visitors and create negative perceptions (Kimić & Polko 2022). Once again, the improvement of environmental factors and added security features is a potential solution in improving visitor perceptions, according to the literature (Kimić and Polko, 2022). The importance of seeing and being seen by others and eliminating hiding spots are particularly emphasised (Jansson, 2013). The observations of this study show that in Marsa, such factors are fairly good, but there is also room for improvement. Perceptions of safety are dependent on both the social and physical factors to which the person is exposed (Sreetheran & Van Den Bosch, 2014). However, according to Sreetheran and Van Den Bosch, (2014), personal characteristics such as age and gender are much more significant in determining these perceptions. It is therefore important that this is considered when addressing these perceptions within such spaces. The perceptions of safety

of elderly visitors must be specifically considered and assured through consultation with them with regard to their specific needs.

In the study by Macintyre et al. (2019), participants demonstrated little attachment for UGSs outside their immediate vicinity. In contrast, most participants in this study expressed a strong sense of care for UGSs, emphasising their importance and the desire for improvement. However, this was then contrasted by the fact that very few participants voiced frustration regarding UGSs being occupied by private businesses. This suggests that these issues warrant further investigation. Macintyre et al. (2019) also found that some participants regarded UGSs as less important because they had their own gardens. In contrast, most participants in this study who had yards still viewed UGSs as an important aspect of the urban environment. One participant highlighted that, due to high-rise buildings, his own yard received little sunlight, making public UGSs particularly important for him.

5.2.8 UGS usage by participants

Nine of the participants in the current research reported frequent use of UGSs in their localities. These participants primarily used UGSs for walking, enjoying moments of serenity and quiet, and socialising. In doing so, they sought to enhance their physical, mental, and social wellbeing. This aligns with findings from other studies (Wang et al., 2021). Some participants also used these spaces for gardening, feeding cats, or spending time with grandchildren or nephews. However, several activities identified in other studies, such as meditation, group exercises, dancing (Pleson et al., 2014), chess playing (Onose et al., 2020) and reading (Gozalo et al., 2019), were neither observed nor reported in this study, except one participant who mentioned reading on occasion in an UGS.

Studies show that whether an UGS is used for walking depends primarily on the size of the UGS, with larger UGSs being utilised more for this purpose (Gozalo et al., 2019). In this study, larger UGSs such as San Anton Gardens were mentioned as spaces participants use for walking. Nonetheless, the participants did mention barriers to accessing these larger UGSs and explained that these barriers often led to larger UGSs being underused. This included barriers such as accessibility issues, unattractiveness, or the presence of antisocial behaviour. On the other hand, some smaller spaces were utilised by participants, particularly those who reported being able to walk only short distances at a time. However, observations revealed that, for the most part, UGSs are poorly suited for walking or running, primarily due to their size and design.

Macintyre et al. (2019) note that UGSs were seen by elderly visitors more as places where they could rest and relax, rather than move about and walk. This applied even more to UGS which were smaller in size. In fact, it was noted that spaces which lacked benches, which are often used for relaxing, were regarded as offering very little to elderly visitors. In the current study, despite the presence of benches, participants in Attard made very infrequent use of smaller UGSs, mostly for the same reasons, that is, that they did not feel that there was much to do. Observations did provide poor scoring for UGSs' potential usage for relaxing. However, in Qormi, such smaller spaces were still used, although here there is a social cohesion element which shall be discussed further.

In contrast to the findings by Macintyre et al. (2019), other studies showed that elderly users who were mostly sedentary in UGSs were actually in a minority, with most being engaged in activities such as meditation or walking (Pleson et al., 2014). This emphasises differences across cultures and studies. However, these types of activities may also depend on organised groups and initiatives. This was observed to be lacking by a particular participant from Qormi, who expressed that such organised events and activities are essential to making UGSs successful. According to the participant, the greatest achievement of such events would be to introduce people to the beauty of UGSs and normalise the usage of such spaces, incorporating them into people's routines and turning them into spaces where people can meet and socialise.

Almost half of the participants reported that they did not use UGSs at all. In Attard, small UGSs were poorly regarded and barely used by participants. Whilst some studies demonstrate positive attitudes by elderly residents towards small UGSs (Onose et al., 2020), other studies show negative attitudes (Macintyre et al., 2019). In fact, in the study by Macintyre et al. (2019), elderly participants perceived smaller UGSs as belonging to the people who lived across or adjacent to such spaces and felt that their presence in these spaces would be regarded as invasive, thus causing personal discomfort. This perception was never brought up by participants in this current study. However, one participant did explain that she felt uncomfortable going to an UGS as it is often occupied by chairs and tables from a local bar. Meanwhile, others acknowledged that a cafeteria had also occupied part of another UGS, but they explained that they would not feel uncomfortable visiting this space. A female participant in Marsa noted that one UGS is often occupied by men who drink from an adjacent bar and thus felt that this was their space and that she would not feel welcome. A number of participants in the study by Macintyre et al. (2019) felt that UGSs were mostly

there for children, a sentiment also expressed by a number of participants in this research. A number of participants expressed that their use of UGSs is largely dependent on the presence of family, particularly grandchildren. Other participants described how, since they no longer have young children of their own, they do not feel that these spaces are for them. In this way, family presence acts not only as a motivator but, in some cases, as the main reason for engaging with these spaces. Therefore, it is important that, whilst family presence continues to be encouraged, UGSs are furnished with amenities that are not solely aimed at children. Bringing children to UGSs can be a good means of promoting socialising in such spaces (Gozalo et al., 2019).

5.3 Research question 3: Which benefits do elderly residents perceive themselves to be obtaining from these UGSs?

5.3.1 Physical health benefits

The results show that six participants felt they obtained physical health benefits from UGSs. Two additional participants felt that UGSs were suitable for providing physical health benefits even though they did not use these spaces themselves. Participants in this group emphasised the importance of walking, recognising its benefits. Thus, for this group of participants, UGSs are providing physical health benefits which are widely reported in international studies (Thompson et al., 2012; Twohig-Bennett & Jones, 2018; WHO, 2020). UGSs helped some of the participants in the study to combat a more sedentary lifestyle and the health complications related to it. This reflects the results of other studies, which found similar outcomes for residents living close to UGSs (Satariano et al., 2012).

Enssle and Kabisch (2020) found that elderly people with good self-reported health levels are more likely to visit UGSs. However, this study found that even participants who self-reported poorer levels of health and mobility obtained physical wellbeing benefits from their UGSs. This difference highlights the importance of UGSs in the local context. As has been mentioned previously, such participants who had poorer levels of mobility were satisfied to walk in and around their closest UGSs, regardless of their size. This occurred in areas which were relatively safe, and often there was an added incentive, such as meeting someone at the UGS, or doing an activity such as gardening or feeding cats. Where these factors were missing, such as in Marsa, participants felt that the UGSs did not provide them with the benefit of providing a space for walking. In fact, Chaudhury et al. (2016) report that UGS attractiveness, walkability and safety are extremely important in determining if residents use

UGSs close to them for physical activity. Therefore, whilst size, design, and infrastructure are important, these other factors are also crucial.

Nonetheless, most UGS visitors in this study with good levels of mobility acknowledged that the spaces were too small for meaningful physical exercise. As a result, these participants primarily used the UGSs as resting spots or as places to pass through during their walks. This manner of using UGSs is consistent with several other studies (Mirrales-Guasch et al., 2019; Sparling et al., 2015; Vich et al., 2021). Nonetheless, studies such as Hopper et al. (2020) found that the larger UGSs promoted physical activity the most. The results suggest that larger and greener UGSs should be prioritised where possible. However, given Malta's current urban context, a more feasible approach may be the development of 'green corridors' and safe, walkable networks of UGSs that encourage physical activity. Without such improvements, many individuals may continue to be deterred from using UGSs for physical exercise. Six participants from this study reported not using UGS for physical activity, due to their limited size. Such participants preferred to walk in quieter streets or visit fields outside the urban area. In the case of Marsa, two participants preferred to visit UGSs in other localities such as Floriana.

5.3.2 Mental health benefits

Eight participants felt that they obtained mental health benefits from UGSs, and twelve in total felt that they provided mental health benefits to the community. Participants praised both larger and smaller UGSs for offering a sense of quiet and calmness. Many described enjoying the greenery they encountered while out and about, emphasising the importance of these spaces as a break from urban surroundings. For those without private green spaces, UGSs were seen as particularly valuable. This aligns with the benefits identified in other international studies (Callaghan et al., 2021; Wood et al., 2017). Interestingly, while participants highlighted these positive aspects, observations of the UGSs revealed that most are less conducive to relaxation, primarily due to limited greenery and their proximity to urban environments and traffic.

It was only a small minority of participants who felt that UGSs were not suitable for providing mental health benefits. Those who felt this way offered various reasons. One participant felt that UGSs played a very minor role in the face of overwhelming challenges to mental health amongst the elderly, such as loneliness and financial and health stresses. Other participants felt that traffic and noise levels detracted from the benefits which they

may provide in this regard. UGSs might, therefore, benefit from noise-reducing embellishments, such as more trees along the perimeter of the UGS (Gomez-Baggethun et al., 2013). Meanwhile, one participant claimed that compared to her own small, private garden, the current UGSs had very little to offer her since they are not of very high quality. This was a sentiment voiced in other studies (Macintyre et al., 2019). Thus, UGSs must be embellished to offer attractive qualities that genuinely help boost mental wellbeing. This includes more tree canopy and greenness levels (Astell-Burt & Feng, 2019) and even small blue spaces such as ponds and fountains (Ha et al., 2022). These were two aspects which were greatly praised when present and were missed when absent or poorly maintained. Such elements would assist the design in feeling truly natural and would allow participants to connect with nature. Further improvements include greater efforts to allow for increased biodiversity and animal life in these spaces, as well as the ability to interact with nature by sitting amongst the grass.

5.3.3 Social wellbeing benefits

The study found that UGSs have facilitated social interactions for half of the participants, serving as spaces where they can meet and connect with others in their community. These spaces align with the concept of ‘third spaces’ or ‘bumping spaces,’ as Garvin et al. (2013) described. This social interaction has enabled participants to build bonds within their neighbourhoods, which supports their ability to age in place (Gardner, 2011). Consistent with findings in international studies, for some participants, local UGSs play a crucial role in fostering social cohesion and enhancing neighbourhood satisfaction (Jennings & Barnkole, 2019; Loukaitou-Sideris et al., 2016; Zhang et al., 2017). On the other hand, eight participants felt that UGSs in their locality were not providing them with any such benefits. In Attard, the main reason for this was that some participants felt that very few people actually visit such spaces. A number of participants in Attard felt that there was not much social cohesion in their locality. According to the participants, this was primarily due to the departure of both young locals and elderly residents from the town, as well as newcomers who had failed to integrate into the community. Social cohesion has already been mentioned as an important factor impacting UGS visitation (Enssle & Kabisch, 2020). Thus, in order for UGSs to be successful, it is very important that communities are fostered and integrated. This can be achieved through several means. As has already been mentioned, one participant in Qormi has highlighted the role of social activities in UGSs as a possible means of creating social cohesion and improving the benefits UGSs provide in this regard.

In Qormi, benefits related to socialisation were highly reported and discussed by participants. Here, participants felt that the community is very integrated and has high levels of social cohesion. In fact, one participant felt that although UGSs provided great socialisation benefits, these benefits were seen in all manner of other spaces, including areas which were not green at all. Meanwhile, in Marsa, the main issue was once again related to feelings of insecurity in such spaces and the lack of accessibility. Thus, these are issues which need to be tackled in this locality before benefits can be obtained from these UGSs.

5.4 Research question 4: What are the experiences of elderly residents in accessing UGSs, and what are the potential barriers that elderly residents face in accessing these UGSs?

Most participants felt that overall, UGSs were accessible for elderly adults. According to most participants, the greatest attribute of UGS accessibility was that UGSs were, for the most part, nearby. Nonetheless, this does not mean this access was regarded as being without its challenges and difficulties. In fact, one participant in Qormi explained that elderly residents have become accustomed to the poor walkability in Qormi and had adapted to it, accepting it as the norm. It is most concerning that 15 of the 16 participants felt that they faced a variety of barriers in their access to UGSs. In fact, two of these participants (P.2 & P.14) felt that the barriers were significant enough for them that they prevented any visits to UGSs.

Several factors can impact accessibility to UGSs for elderly participants. This includes UGS distribution, the distance needed to travel to a UGS, cultural contexts, as well as matters related to UGS aesthetics, infrastructure and the health of the elderly resident (Wen et al., 2020). Barriers reported by participants included both physical and psychological barriers (similar to Biernacka & Kronenberg, 2018) as well as outside and inside barriers (Barber et al., 2021). Participants in Attard and Marsa mentioned physical barriers, mostly concerning the walkability of the streets. This mainly involved dangerous, uneven, and unmaintained paving inside and outside UGSs. Others mentioned the problems posed by traffic.

This has also been confirmed by local studies, which identified uneven and unmaintained paving as well as other impediments such as signposts and waste bags on the pavements (Muscat, 2016) as an impediment, particularly for elderly pedestrians (Galea, 2019). This, therefore, highlights the need for walkability studies and the prioritisation of improvements to the most vulnerable areas. However, local studies have shown that improvements to street

and pavement infrastructure alone may not be sufficient. Increased perceptions of safety, aesthetic enjoyment of the street and an improvement in the dynamic between pedestrian and vehicular traffic are also essential to promoting walkability (Muscat, 2016). Recent studies have argued that perceived accessibility and individual factors are far more of a determinant of UGS usage than physical accessibility (Terefe & Hou, 2024). Studies have also found that the surrounding environment is a crucial factor in determining the accessibility of an UGS (Anaqami & Santosa, 2021). Thus, a more holistic approach needs to be taken than simply improving infrastructure..

Powerful psychological barriers involved fear of crime and antisocial behaviour, similar to fears noted in international studies such as those of Park (2017). This was expressed particularly in Marsa. Academics have emphasised the particular impacts that fear of crime can have on the ability of the elderly to access public spaces (Ceccatto & Bamzar, 2016). This can be even in the case where crime rates are lower than individual perceptions of such rates (Ceccatto & Bamzar, 2016). In the current study, some participants felt that increased police presence was important in promoting perceptions of safety in these zones. Participants also praised some initiatives, such as the closure of certain spaces during the evening, as well as the removal of benches just outside these UGSs, which were promoting loitering. Nonetheless, it was evident from the responses that to overcome such psychological barriers, this issue must also be tackled on a community level, that is, beyond the UGSs. This is since participants indicated that besides the large psychological barrier, there is also a social barrier between the elderly residents in Marsa and the migrants who frequent the UGSs.

The dominance of a particular group in a public space is a potentially strong social barrier which can result in other individuals with different group identities feeling unwelcome or uncomfortable (Noël et al., 2021). These feelings of discomfort may also arise from conceptions of the excluded individual about the dominant group. This appears to also be the case in UGSs in Marsa. Some participants from this locality explained that the primary reason elderly people avoid visiting certain UGSs is not necessarily fear of crime, but rather a sense that these spaces do not feel like their own. Participants felt that these spaces are dominated by other groups, making them feel excluded. Therefore, social cohesion between the elderly and migrant groups must be improved. This has been emphasised in a study by Pitas et al. (2024), which emphasised the building of trust, empathy and a positive relationship between the two parties as well as with the local authorities. Therefore, it is unlikely that investments within the UGSs produce successful outcomes unless strategies are

also made regarding the security and social cohesion of the community. Interestingly, this same social barrier was also expressed by two female participants, who expressed that they did not feel comfortable visiting certain spaces because men primarily occupied them. A further barrier, which was identified by the current study, was also identified by Noël et al. (2021). This barrier occurs when an UGS does not fulfil the social needs of the user. This was a present notion, particularly in Attard, where, as described previously, some participants felt that there was nobody to meet and talk to in such spaces. Others felt that these were spaces which were designed primarily for children.

Personal health barriers can be obstacles to UGS access (Baćak & Ólafsdóttir, 2017). However, these were not perceived by most interviewed participants as significant obstacles to accessing UGSs. Nonetheless, health concerns did affect some participants in the sense that they limited their visits to UGSs that were farther away from their homes. One study found that UGS fragmentation may be a way in which better access is provided (Gong et al., 2016). That is, accessibility may be promoted through the establishment of several smaller UGSs which are better distributed and interconnected. However, in the current study, such areas were found to be lacking in attractiveness and quality, and therefore, this potential weakness would need to be addressed by city planners. This study has identified this shortcoming of smaller UGSs and thus, such spaces require more embellishment and better interconnectedness. Studies such as Zhang et al. (2023) have suggested that elderly residents should have quality UGSs within a ten-minute walking distance for such spaces to be accessible. However, this may be an unreliable standard as this varies according to the person's pace and does not consider several other factors. Thus, whilst for most adults, UGSs are a short walking distance, in Marsa, some participants argued that several UGSs are too far for them to walk. Zhang et al. (2023) also advocate for more linear UGSs, which are accessible from various entry points and promote walking. These would also be more practical as they can be planned along frequently used routes and roads. It is critical to improve walkability levels as studies have shown that poor levels of walkability make elderly residents vulnerable to isolation, reduced independence and insecurity (Galea, 2019).

5.5 Conclusion

This chapter has discussed the results of the study in light of the academic literature in the field and provided a thorough analysis of the findings. The chapter has also been able to provide answers to the research questions of this study. These shall be summarised in the

following chapter. The following chapter will also discuss the limitations of the current study and opportunities for further research.

Chapter 6: Conclusion

This chapter consolidates and presents the answers to the research questions in this study. It offers a synthesis of the main findings and highlights their implications for future projects concerning UGSs. This chapter presents the contributions of the study towards a better understanding of the dynamics of local UGSs with regard to their relationship with elderly residents. The chapter also offers a reflection of the main limitations of the current study and proposes suggestions for further research.

6.1 Summary of findings

Concerning the first research question, Qormi has the most UGSs, which follow the definition adopted by this current study. Meanwhile, Marsa has the least. In terms of area covered by UGSs, Attard is greatly advantaged. However, in terms of UGS quality, there is little to differentiate between the three localities. UGSs in all three localities have poor scores for quality in UGSs, including amenities, facilities, aesthetics and potential usage. Mediocre scores were obtained for surroundings and access, whilst good scores were obtained for safety and civility.

The second research question focused on the perceptions of the participants with regard to the UGSs and their usage of these spaces. Participants did not produce exclusive positive or negative views about UGSs. Instead, they offered more nuanced perspectives, discussing both positive and negative elements of the UGSs in their locality. Participants were largely positive with regard to the aesthetics of the UGSs in their locality, praising the presence of trees. Participants also praised the maintenance of infrastructure in most UGSs, although they were able to identify shortcomings in others. Many participants managed to describe fondness for such spaces, including nostalgic elements.

Nonetheless, other participants felt that the UGSs were not green enough and that more vegetation was required. The maintenance of the vegetation was also criticised in a number of UGSs, and many participants also felt that, despite the best efforts of the authorities, littering was still an issue. Others felt that, particularly in smaller UGSs, there was not enough detachment from the urban surroundings. Smaller spaces were generally poorly regarded in Attard and Marsa. In Qormi, these were regarded more positively. In Marsa, the diversity among the resident population was identified as an issue impacting perceptions of UGSs. A number of participants in Marsa felt uncomfortable visiting these places, as they felt that there were too many incivilities in such areas or felt a lack of connection to the area

due to the lack of integration between diverse community members. With regard to UGS usage, the nine participants who used UGSs described using these spaces mostly for walking, relaxing and in some cases to socialise. However, eight participants described not using UGSs at all. Many participants felt that there was not much to do in the smaller UGSs. Others regarded UGSs as spaces for children to play, rather than as spaces for adults.

Concerning the third research question, participants were divided as to the UGSs ability to provide them with benefits. Half of the participants felt that the UGSs provide them with mental health benefits as these spaces allow them to sit and relax quietly, observing their surroundings. The impact of trees and greenery was also described in this regard. This benefit was particularly emphasised by participants who expressed that they did not have their own yards or gardens. However, others felt that UGSs were not sufficiently detached to provide this benefit. Nearby traffic and noise detracted from the UGS's ability to provide this benefit for these participants. Others also felt that the UGSs needed to be more attractive, with more green and blue elements for such a benefit.

Half of the participants found that the ability to meet people and socialise was a great benefit, offered by such spaces. This benefit was particularly described in Qormi. However, other participants in Attard felt that there was not enough social cohesion within the community and that many UGSs, particularly smaller UGSs, did not function as spaces where one could meet and socialise with others. In Marsa, participants felt that such spaces could not provide these benefits to the elderly, as the elderly did not frequent these spaces. Six participants obtained physiological benefits. These participants used the UGSs to engage in physical activity. The UGSs were of particular benefit to those who reported poor levels of health. However, other participants felt that the UGSs were too small for such benefits and preferred walking in quieter streets or on countryside roads.

Concerning the final research question, most participants felt that UGSs were generally accessible to them, particularly as they were nearby. However, all but one of the participants managed to identify and describe barriers which made accessibility more difficult. Physical barriers were described as an issue by some participants. Walkability was a concern for these participants, both in terms of maintenance of the pavements and also with regard to the dangers posed by traffic. In Marsa, there was the additional barrier of discomfort in UGSs due to incivilities and social barriers. Personal health was not a factor which impacted

accessibility to UGSs for most participants, although it did restrict the choices of some participants, who were only able to access the nearest UGSs.

6.2 Implications for policymakers

The findings of the current study provide several implications concerning the evident need for improvements with regard to UGSs and their suitability towards elderly residents' needs and preferences. Primarily, the quality of UGSs must improve, given that the observation score obtained by the majority of UGSs in this study was low. Whilst several participants provided positive views of UGSs, it is important that the positive elements are now implemented in as many UGSs as possible and that negative elements, which have been identified, are minimised. This will impact not only the quality of UGSs but also the perceptions of the elderly and their usage of such spaces.

One particular need is the need to improve the availability of amenities and facilities within UGSs. This includes well-maintained water-related facilities, sports courts, as well as public toilets, shelter, picnic tables and sports amenities. It is important that elderly residents feel that there is something to do in these spaces. A number of participants felt that these spaces are only for children. Therefore, more must be done to attract elderly visitors. One participant even suggested the idea of community gardens, which have also been shown to be impactful in the local literature. Crucial towards improving the perceptions of elderly residents towards UGSs is the improvement of UGS aesthetics. Once again, using the positive elements identified by participants, it is clear that UGSs should possess a stronger green element. This would allow for biodiversity to flourish and a more natural feel to dominate these spaces, whilst ensuring that walkability is maintained. A number of participants made this point and feel that UGSs in Malta are too dominated by paving. Vegetation and any aromatic gardens must also be well-maintained. Based on the observations and interviews, the integration of public attractions and blue spaces within the UGSs is also a factor which would help improve UGS quality and perceptions of potential visitors. It is also important to preserve nostalgic elements within UGSs in order to provide a deeper connection to the space for elderly individuals. Security and safety must also be prioritised as this was a negative perception identified by a number of participants. It is also crucial that elderly residents are amongst the people consulted in both the design and maintenance of the UGSs.

Such improvements can potentially boost the ability of UGSs to provide benefits, particularly mental health benefits. However, many participants also felt that UGSs were not

detached enough from their surroundings for this to occur. These participants felt that noise, traffic and pollution levels around the UGSs do not allow for this benefit to take place. Thus, planners must ensure that measures are taken to reduce these elements and improve detachment from the surrounding urban stresses. This can include the control of traffic levels in the streets around certain UGSs. Given that a large number of participants stressed that UGSs are too small to enable physical activity, it is important to promote the establishment of networks of UGSs and green corridors, which could allow for this to take place. Furthermore, the establishment of larger UGSs is to be established where possible, as these also have an important role and are among the most attractive UGSs. Nonetheless, this current study, along with the international literature, has shown that smaller UGSs need to be available at a short distance, particularly for elderly residents with mobility constraints.

Concerning social wellbeing benefits, it is important that in order to be attractive, such spaces are not regarded as being empty. Thus, one participant suggested that more activities are organised by local councils and other groups in local UGSs. This would promote the usage of UGSs and ownership of such spaces. However, given that research shows the barriers that a lack of social cohesion can create in accessibility and usage of such spaces, it is important that issues of social cohesion and isolation among the elderly are addressed at a community level. This also applies with regard to the issues identified by the participants in Marsa. Whilst the issues of incivilities should be addressed further by the authorities, it is also important that efforts are made to improve social cohesion between the elderly and the migrant groups which exist in Marsa. This is because the issue of discomfort in UGSs due to social barriers has been described by all participants in Marsa. Concerning physical barriers to accessibility, it is important that the spaces around the UGS are also considered walkable, aesthetically pleasing and safe. Thus, efforts must be made to ensure that neighbourhoods also facilitate walkability for elderly pedestrians.

6.3 Limitations of the study

The current study acknowledges certain limitations in the nature and methodology of the study which may therefore necessitate further investigation and future research. Firstly, the nature of the study as a qualitative study means that the findings obtained from the study cannot be generalised for the broader elderly populations of the localities under study or of Malta. Nonetheless, they provide good insights into the current situations experienced by the participants and their perspectives on UGSs. These can be used by policymakers and can

also serve as the basis for further quantitative studies. A further limitation is that the age group considered in the study is broad, and the situation for elderly people in their late sixties can be very different to that of others who are older. Nonetheless, the insights provided by this dissertation can be the basis for studies which can compare these different situations or focus on a more specific age group. A further limitation, which has already been acknowledged, is the potential unintentional bias in participant selection, given that the participants were recruited through purposive sampling.

6.4 Further research

Future research may include research of a quantitative nature, the results of which could be generalised for the broader Maltese elderly population. Using the themes and principles identified in this current study, future quantitative studies can select particular aspects of the current study's findings and investigate them further. This can include studies which test the relationship between UGSs and health outcomes amongst elderly individuals. Such studies can then assess the impacts of UGSs on the health of the broader elderly population. Additionally, similar qualitative studies can also be conducted in other localities which have different contexts and situations. Walk-along interviews can also be employed in future research and may offer new insights to researchers. Finally, studies can be undertaken which include the perspectives and contributions of other parties such as urban planners, local councillors and other experts.

This study has contributed to the literature by providing a better understanding of the relationship between elderly residents and the UGSs present in the chosen localities. Whilst the results may not be generalised to a broader population, valuable insights were obtained from this study. These insights may be the basis for further research which investigates particular aspects of the findings of the current study. The findings may also contribute to a better understanding of the local situation concerning elderly relationships with UGSs in their locality, thus helping planners and policymakers to ensure that such spaces are suited to the needs and preferences of the elderly population.

References

- Adu, P., & Miles, A. D. (2024). *Dissertation research methods: A step- by- step guide to writing up your research in the social sciences focuses*. Routledge.
<https://doi.org/10.4324/9781003268154>
- Agyeman, J. (2013). *Introducing just sustainabilities: Policy, planning, and practice*. Zed Books Ltd.
- Alshamari, H. A. (2022). Employing nostalgia to reuse obsolete open public spaces. *Journal of Urban Planning and Development*, 148(4), 05022036.
[https://doi.org/10.1061/\(ASCE\)UP.1943-5444.0000867](https://doi.org/10.1061/(ASCE)UP.1943-5444.0000867)
- Anaqami, I. H., & Santosa, R. B. (2021). The influence of service, facilities, and environmental surrounding toward urban park's attractiveness: A case study of Manggemaci Park and Amahami Park). [Unpublished manuscript].
- Andrews, B. (2014). *Quantifying the wellbeing benefits of urban green space*. [Doctoral thesis: University of East Anglia]. University of East Anglia Digital Repository.
<https://ueaeprints.uea.ac.uk/id/eprint/51282/>
- Andrianou, A. A., & Papaioannou, G. (2019). Cultural landscapes and botanic gardens: the case of mon-repos garden in Corfu Island, Greece. In *Cultural Sustainable Tourism: A Selection of Research Papers from IEREK Conference on Cultural Sustainable Tourism (CST), Greece 2017* (pp. 99-108). Cham: Springer International Publishing. https://doi:10.1007/978-3-030-10804-5_10
- Anguelovski, I., Connolly, J. J., Masip, L., & Pearsall, H. (2018). Assessing green gentrification in historically disenfranchised neighborhoods: a longitudinal and spatial analysis of Barcelona. *Urban Geography*, 39(3), 458-491.
<https://doi.org/10.1080/02723638.2017.1349987>

- Anguelovski, I., Connolly, J. J., Pearsall, H., Shokry, G., Checker, M., Maantay, J., Gould, K., Lewis, T., Maroko, A., & Roberts, J. T. (2019). Why green “climate gentrification” threatens poor and vulnerable populations. *Proceedings of the National Academy of Sciences*, 116(52), 26139-26143.
- Aspinall, P. A., Thompson, C. W., Alves, S., Sugiyama, T., Brice, R., & Vickers, A. (2010). Preference and relative importance for environmental attributes of neighbourhood open space in older people. *Environment and Planning B: Planning and Design*, 37(6), 1022-1039. <https://doi.org/10.1068/b36024>
- Astell-Burt, T., & Feng, X. (2019). Association of urban green space with mental health and general health among adults in Australia. *JAMA Network Open*, 2(7), <https://doi:10.1001/jamanetworkopen.2019.8209>
- Astell-Burt, T., Navakatikyan, M., Eckermann, S., Hackett, M., & Feng, X. (2022). Is urban green space associated with lower mental healthcare expenditure? *Social Science & Medicine*, 292, 114503. <https://doi.org/10.1016/j.socscimed.2021.114503>
- Azzopardi, K. (2020, October 12). Countryside forms just 18.3% of the Maltese islands' land, excluding agricultural land. *The Malta Independent*. <https://www.independent.com.mt/articles/2020-10-12/local-news/Countryside-forms-just-18-3-of-the-Maltese-islands-land-excluding-agricultural-land-6736227757>
- Azzopardi, L. (2019). *Planning policy and its effects on urban regeneration: The case of Marsa* [Master's thesis, University of Malta]. OAR@UM. <https://www.um.edu.mt/library/oar/handle/123456789/71092>

- Bačák, V., & Olafsdottir, S. (2017). Gender and validity of self-rated health in nineteen European countries. *Scandinavian Journal of Public Health*, 45(6), 647-653. <https://doi.org/10.1177/1403494817717405>
- Baldwin, J. C. (2020). *Urban green space: Mitigator or multiplier of inequality in the Denver metropolitan area?* [Doctoral thesis: University of Denver]. University of Denver Digital Commons. <https://digitalcommons.du.edu/etd/1721/>
- Baniassadi, A., Lipsitz, L. A., Sailor, D., Pascual-Leone, A., & Manor, B. (2023). Heat waves, climate change, and implications for an aging population. *The Journals of Gerontology: Series A*, 78(12), 2304-2306. <https://doi.org/10.1093/gerona/glad230>
- Barber, A., Haase, D., & Wolff, M. (2021). Permeability of the city – Physical barriers of and in urban green spaces in the city of Halle, Germany. *Ecological Indicators*, 125, 1-12. <https://doi.org/10.1016/j.ecolind.2021.107555>
- Barnett, D. W., Barnett, A., Nathan, A., Van Cauwenberg, J., Cerin, E., & Council on Environment and Physical Activity (CEPA)—Older Adults working group. (2017). Built environmental correlates of older adults' total physical activity and walking: a systematic review and meta-analysis. *International Journal of Behavioral Nutrition and Physical Activity*, 14, 1-24. <https://doi.org/10.1186/s12966-017-0558-z>
- Basu, S., & Nagendra, H. (2021). Perceptions of park visitors on access to urban parks and benefits of green spaces. *Urban Forestry & Urban Greening*, 57, 126959. <https://doi.org/10.1016/j.ufug.2020.126959>
- Beauchamp, T. L., & Childress, J. F. (2009). *Principles of biomedical ethics* (6th ed.). Oxford University Press.

- Bedimo-Rung, A. L., Gustat, J., Tompkins, B. J., Rice, J., & Thomson, J. (2006). Development of a direct observation instrument to measure environmental characteristics of parks for physical activity. *Journal of Physical Activity and Health*, 3(s1), S176-S189. <https://doi.org/10.1123/jpah.3.s1.s176>
- Bell, S. L., Foley, R., Houghton, F., Maddrell, A., & Williams, A. M. (2018). From therapeutic landscapes to healthy spaces, places and practices: A scoping review. *Social science & medicine*, 196, 123-130. <https://doi.org/10.1016/j.socscimed.2017.11.035>
- Beyer, K. M., Kaltenbach, A., Szabo, A., Bogar, S., Nieto, F. J., & Malecki, K. M. (2014). Exposure to neighborhood green space and mental health: evidence from the survey of the health of Wisconsin. *International Journal of Environmental Research and Public Health*, 11(3), 3453-3472. <https://doi.org/10.3390/ijerph110303453>
- Bezzina, V. (2019). Malta's secret gardens: a compilation of underutilised 19th-century public gardens and the evaluation of their present state (Master's dissertation).
- Biernacka, M., & Kronenberg, J. (2018). Classification of institutional barriers affecting the availability, accessibility and attractiveness of urban green spaces. *Urban Forestry & Urban Greening*, 36, 22-33. <https://doi.org/10.1016/j.ufug.2018.09.007>
- Biggam, J. (2011). *Succeeding with your master's dissertation: A step-by-step handbook*. McGraw-Hill Education.
- Blanusa, T., Hadley, J., 2019. Impact of plant choice on rainfall runoff delay and reduction by hedge species. *Landscape and Ecological Engineering*, 15(4), 401–411. <https://doi.org/10.1007/s11355-019-00390-x>.
- Bodnar, J. (2015). Reclaiming public space. *Urban studies*, 52(12), 2090-2104. [https://doi:10.1177/0042098015583626](https://doi.org/10.1177/0042098015583626)

- Bottero, M., Caprioli, C., Foth, M., Mitchell, P., Rittenbruch, M., & Santangelo, M. (2022). Urban parks, value uplift and green gentrification: An application of the spatial hedonic model in the city of Brisbane. *Urban Forestry & Urban Greening*, 74, 127618. <https://doi.org/10.1016/j.ufug.2022.127618>
- Boulton, C., Dedekorkut-Howes, A., & Byrne, J. (2018). Factors shaping urban greenspace provision: A systematic review of the literature. *Landscape and Urban Planning*, 178, 82-101. <https://doi.org/10.1016/j.landurbplan.2018.05.029>
- Bourdieu, P. (1986). *The forms of capital*. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). Greenwood Press.
- Brain, D. (2019). Reconstituting the urban commons: Public space, social capital and the project of urbanism. *Urban Planning*, 4(2), 169-182. <https://doi.org/10.17645/up.v4i2.2018>
- Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. Sage Publications Ltd.
- Briguglio, L. (2024). The sustainable development implications of major economic changes in Malta between 2012 and 2021. *Xjenza Online*, 12(Special Issue) 19-30. <https://www.xjenza.org/ISSUES/11/02.pdf>
- Brinkmann, S. (2018). The interview. In Denzin, K. N., & Lincoln, S. Y. (Eds.), *The Sage handbook of qualitative research* (5th ed., pp. 997-1038). SAGE Publications, Inc.
- Buscatto, M. (2013). Doing ethnography: Ways and reasons. In Flick, U. (Ed.), *The sage handbook of qualitative data analysis*. Sage.
- Callaghan, A., McCombe, G., Harrold, A., McMeel, C., Mills, G., Moore-Cherry, N., & Cullen, W. (2021). The impact of green spaces on mental health in urban settings:

- A scoping review. *Journal of Mental Health*, 30(2), 179-193.
<https://doi.org/10.1080/09638237.2020.1755027>
- Calleja, J. (1991). Il-ġnien ta' Santa Veneranda u l-Gran Mastru Antonio Manoel de Vilhena. *Programm Tal-Festi F' Ġieħ Santa Venera V.M.*, 1991, 73, 75.
<https://www.um.edu.mt/library/oar/handle/123456789/71299>
- Camilleri, E. (2022). *Analysing the accessibility of green open spaces: a case study of Floriana, Malta* [Master's thesis, University of Malta]. OAR@UM.
<https://www.um.edu.mt/library/oar/handle/123456789/108916>
- Canas, C. (2024). *Assessing perceived walkability through pedestrian experiences using a citizen science approach* [Doctoral thesis, University of Malta]. OAR@UM.
<https://www.um.edu.mt/library/oar/handle/123456789/132488>
- Carabott, S. (2022). Robert Abela promises €700 million investment in urban 'green lungs'. *Times of Malta*. Retrieved September 28, 2024.
<https://timesofmalta.com/article/robert-abela-promises-700-million-investment-in-urban-green-lungs.935903>
- Cardona, M. (2024). *Land use in the area of Għar Hanzir, limits of Hal Qormi: Conflicts and complementarities* [Bachelor's thesis, University of Malta]. OAR@UM.
<https://www.um.edu.mt/library/oar/handle/123456789/126590>
- Carmona, M. (2019). Principles for public space design, planning to do better. *Urban design international*, 24(1), 47-59. <https://doi.org/10.1057/s41289-018-0070-3>
- Carr, S., Francis, M., Rivlin, L. G., and Stone, A. M. (1992) *Public space*. Cambridge University Press.
- Ceccato, V., & Bamzar, R. (2016). Elderly victimization and fear of crime in public spaces. *International Criminal Justice Review*, 26(2), 115-133.
<https://doi.org/10.1177/10575677166390>

- Charmaz, K., Thornberg, R., & Keane, E. (2018). Evolving grounded theory and social justice inquiry. In Denzin, N. K., & Lincoln, Y. S. (Eds.), *The Sage handbook of qualitative research* (5th ed., pp. 720-759). Sage.
- Chaudhury, H., Campo, M., Michael, Y., & Mahmood, A. (2016). Neighbourhood environment and physical activity in older adults. *Social Science & Medicine*, 149, 104-113. <http://dx.doi.org/10.1016/j.socscimed.2015.12.011>
- Chen, J., & Chang, Z. (2015). Rethinking urban green space accessibility: Evaluating and optimizing public transportation system through social network analysis in megacities. *Landscape and Urban Planning*, 143, 150-159. <https://doi.org/10.1016/j.landurbplan.2015.07.007>
- Chen, Y., Xu, Z., Byrne, J., Xu, T., Wang, S., & Wu, J. (2021). Can smaller parks limit green gentrification? Insights from Hangzhou, China. *Urban Forestry & Urban Greening*, 59, 127009. <https://doi.org/10.1016/j.ufug.2021.127009>
- Clark, A., & Emmel, N. (2010). *Using walking interviews*. National Centre for Research Methods. <http://eprints.ncrm.ac.uk/1323/1/13-toolkit-walking-interviews.pdf>
- Clarke, M., Wallace, C., Cadaval, S., Anderson, E., Egerer, M., Dinkins, L., & Platero, R. (2023). Factors That Enhance or Hinder Social Cohesion in Urban Greenspaces: A Literature Review. *Urban Forestry & Urban Greening*, 84, 127936. <https://doi.org/10.1016/j.ufug.2023.127936>
- Claus, K., & Rousseau, S. (2012). Public versus private incentives to invest in green roofs: A cost benefit analysis for Flanders. *Urban Forestry & Urban Greening*, 11(4), 417-425. <https://doi.org/10.1016/j.ufug.2012.07.003>

- Cohen, D. A., Marsh, T., Williamson, S., Derose, K. P., Martinez, H., Setodji, C., & McKenzie, T. L. (2010). Parks and physical activity: why are some parks used more than others?. *Preventive Medicine*, 50, S9-S12. <https://doi.org/10.1016/j.ypmed.2009.08.020>
- Colding, J., Gren, Å., & Barthel, S. (2020). The incremental demise of urban green spaces. *Land*, 9(5), 162. <https://doi.org/10.3390/land9050162>
- Cole, H. V., Triguero-Mas, M., Connolly, J. J., & Anguelovski, I. (2019). Determining the health benefits of green space: Does gentrification matter? *Health & Place*, 57, 1-11. <https://doi.org/10.1016/j.healthplace.2019.02.001>
- Collins, R. M., Spake, R., Brown, K. A., Ogutu, B. O., Smith, D., & Eigenbrod, F. (2020). A systematic map of research exploring the effect of greenspace on mental health. *Landscape and Urban Planning*, 201, 103823. <https://www.sciencedirect.com/science/article/pii/S0169204619313258?via%3Dihub>
- Conedera, M., Del Biaggio, A., Seeland, K., Moretti, M., & Home, R. (2015). Residents' preferences and use of urban and peri-urban green spaces in a Swiss mountainous region of the Southern Alps. *Urban Forestry & Urban Greening*, 14(1), 139-147. <https://doi.org/10.1016/j.ufug.2015.01.003>
- Creswell, J. W. (2015). *A concise introduction to mixed methods research*. Sage
- Creswell, W. J., & Creswell D. J. (2018). *Research design: Qualitative, quantitative and mixed methods approaches* (5th ed.) Sage Publications Inc.
- Curran, W., & Hamilton, T. (Eds.). (2018). *Just green enough: Urban development and environmental gentrification*. Routledge.

- Dadvand, P., & Nieuwenhuijsen, M. (2019). Green space and health. In M. Nieuwenhuijsen & H. Khreis (Eds.), *Integrating human health into urban and transport planning: A framework* (pp. 409–423). Springer. <https://doi.org/10.1007/978-3-319-74983-9>
- Dadvand, P., Bartoll, X., Basagaña, X., Dalmau-Bueno, A., Martinez, D., Ambros, A., Cirach, M., Triguero-Mas, M., Gascon, M., Borell, C., & Nieuwenhuijsen, M. J. (2016). Green spaces and general health: Roles of mental health status, social support, and physical activity. *Environment International*, 91, 161-167. <https://doi.org/10.1016/j.envint.2016.02.029>.
- Dalton, A. M., Wareham, N., Griffin, S., & Jones, A. P. (2016). Neighbourhood greenspace is associated with a slower decline in physical activity in older adults: A prospective cohort study. *SSM - Population Health*, 2, 683-691. <http://dx.doi.org/10.1016/j.ssmph.2016.09.006>
- Dash, S. P., & Thilagam, N. L. (2022). A study on inter-relationship of open space and social cohesion for wellbeing of elderly: A systematic literature Review. *International Journal of Built Environment and Sustainability*, 9(1), 55-72. <https://doi.org/10.11113/ijbes.v9.n1.880>
- De Oliveira Cunha, M. V. P., Costa, A. D. L., & Da Costa Ireland, M. (2012). Ergonomic aspects to be considered in planning public spaces destined for elderly people. *Work*, 41(1), 3827-3833. DOI: 10.3233/WOR-2012-0685-3827
- Dehove, M., Mikuni, J., Podolin, N., Moser, M. K., Resch, B., Doerrzapf, L., ... & Oberzaucher, E. (2024). Exploring the influence of urban art interventions on attraction and wellbeing: an empirical field experiment. *Frontiers in Psychology*, 15, 1409086. <https://doi.org/10.3389/fpsyg.2024.1409086>

- Delgado-Capel, M. J., Cariñanos, P., & Escudero-Viñolo, M. (2023). Capacity of urban green infrastructure spaces to ameliorate heat wave impacts in mediterranean compact cities: Case study of Granada (south-eastern Spain). *Land*, 12(5), 1076. <https://doi.org/10.3390/land12051076>
- Dennis, M., Cook, P. A., James, P., Wheater, C. P., & Lindley, S. J. (2020). Relationships between health outcomes in older populations and urban green infrastructure size, quality and proximity. *BMC Public Health*, 20, 1-15. <https://doi.org/10.1186/s12889-020-08762-x>
- Denzin, N. K., & Lincoln, Y. S. (Eds.). (2011). *The SAGE handbook of qualitative research* (4th ed.). Sage.
- Edwards, N., Hooper, P., Trapp, G. S., Bull, F., Boruff, B., & Giles-Corti, B. (2013). Development of a public open space desktop auditing tool (POSDAT): A remote sensing approach. *Applied Geography*, 38, 22-30. <https://doi.org/10.1016/j.apgeog.2012.11.010>
- Enssle, F., & Kabisch, N. (2020). Urban green spaces for the social interaction, health and wellbeing of older people—An integrated view of urban ecosystem services and socio-environmental justice. *Environmental Science & Policy*, 109, 36-44. <https://doi.org/10.1016/j.envsci.2020.04.008>
- Environment and Resources Authority. (2019). *Investing in the multi-functionality of green infrastructure (GI) – An information document to support GI thinking in Malta*. <https://era.org.mt/wp-content/uploads/2019/05/GI-InformationDocument-ERA-2019.pdf>

- Environment and Resources Authority. (2024). *Improving wellbeing in Malta's towns and villages*. <https://era.org.mt/wp-content/uploads/2024/03/Improving-Wellbeing-in-Maltas-Towns-and-Villages.pdf>
- Environment and Resources Authority. (n.d.). *Green infrastructure*. Environment and Resources Authority. Retrieved September 10, 2024, from <https://era.org.mt/topic/green-infrastructure/>
- Feng, X., Toms, R., & Astell-Burt, T. (2022). The nexus between urban green space, housing type, and mental health. *Social Psychiatry and Psychiatric Epidemiology*, 57(9), 1917-1923. <https://doi.org/10.1007/s00127-022-02266-2>
- Flick, U. (2015). *Introducing research methodology: A beginner's guide to doing a research project* (2nd ed). Sage Publications Inc.
- Fraser, N. (1990) Rethinking the public sphere: A contribution to the critique of actually existing democracy. *Social Text*, 25, p.56-80. <https://doi.org/10.2307/466240>.
- Fuller, C., & Carter, M. J. (2015). Symbolic interactionism. *Sociopedia.Isa*, 1(1) 1-17. DOI: 10.1177/205684601561
- Gaikwad, A., & Shinde, K. (2019). Use of parks by older persons and perceived health benefits: A developing country context. *Cities*, 84, 134-142. <https://doi.org/10.1016/j.cities.2018.08.001>
- Galdies, C. (2022). *The state of the climate 2022: A multidecadal report and assessment of Malta's climate*. National Statistics Office, Malta.
- Galdies, C., & Lau, H. S. (2020). Urban heat island effect, extreme temperatures and climate change: A case study of Hong Kong SAR. In W. Leal Filho, G. J. Nagy, M. Borga, P. D. Chávez Muñoz, & A. Magnuszewski (Eds.), *Climate change, hazards and*

- adaptation options: Handling the impacts of a changing climate* (pp. 369–388). Springer.
- Galea, A. (2019). *The impact of the Maltese urban environment on the elderly pedestrian* [Master's thesis, University of Malta]. OAR@UM. <https://www.um.edu.mt/library/oar/handle/123456789/71148>
- Galea, A. M. (2024, April 14). Overpopulated and frustrated. *Times of Malta*. Retrieved September 28, 2024 from <https://timesofmalta.com/article/overpopulated-frustrated.1090876>
- Gardner, P. J. (2011). Natural neighborhood networks—Important social networks in the lives of older adults aging in place. *Journal of Aging Studies*, 25(3), 263-271. <https://doi.org/10.1016/j.jaging.2011.03.007>
- Garvin, E., Branas, C., Keddem, S., Sellman, J., & Cannuscio, C. (2013). More than just an eyesore: local insights and solutions on vacant land and urban health. *Journal of Urban Health*, 90, 412-426. <https://doi.org/10.1007/s11524-012-9782-7>
- Gascon, M., Triguero-Mas, M., Martínez, D., Dadvand, P., Rojas-Rueda, D., Plasència, A., & Nieuwenhuijsen, M. (2016). Residential green spaces and mortality: A systematic review. *Environment International*, 86, 60-67. <http://dx.doi.org/10.1016/j.envint.2015.10.013>
- Gauci, R., & Schembri, J. A. (Eds.). (2019). *Landscapes and landforms of the Maltese Islands*. Springer.
- Gehl, J., & Svarre, B. (2013). *How to study public life*. Island Press.
- Gesler, W. (1996). Lourdes: healing in a place of pilgrimage. *Health & Place*, 2(2), 95-105. [https://doi.org/10.1016/1353-8292\(96\)00004-4](https://doi.org/10.1016/1353-8292(96)00004-4)

- Gesler, W. M. (1992). Therapeutic landscapes: medical issues in light of the new cultural geography. *Social science & medicine*, 34(7), 735-746.
[https://doi.org/10.1016/0277-9536\(92\)90360-3](https://doi.org/10.1016/0277-9536(92)90360-3)
- Gianfredi, V., Buffoli, M., Rebecchi, A., Croci, R., Oradini-Alacreu, A., Stirparo, G., ... & Signorelli, C. (2021). Association between urban greenspace and health: A systematic review of literature. *International Journal of Environmental Research and Public Health*, 18(10), 5137. <https://doi.org/10.3390/ijerph18105137>
- Gidlow, C. J., & Ellis, N. J. (2011). Neighbourhood green space in deprived urban communities: Issues and barriers to use. *Local Environment*, 16(10), 989-1002.
<https://doi.org/10.1080/13549839.2011.582861>
- Gidlow, C., van Kempen, E., Smith, G., Triguero-Mas, M., Kruize, H., Gražulevičienė, R., ... & Nieuwenhuijsen, M. J. (2018). Development of the natural environment scoring tool (NEST). *Urban Forestry & Urban Greening*, 29, 322-333.
<https://doi.org/10.1016/j.ufug.2017.12.007>
- Giles-Corti, B., Christian, H., Foster, S., Timperio, A., & Knuiman, M. (2005). *POST*. University of Western Australia.
- Gomez-Baggethun, E., Gren, Å., Barton, D. N., Langemeyer, J., McPhearson, T., O'Farrell, P., Andersson, E., Hamstead, Z., & Kremer, P. (2013). Urban ecosystem services. In T. Elmqvist, M. Fragkias, J. Goodness, B. Güneralp, P. J. Marcotullio, R. I. McDonald, S. Parnell, M. Schewenius, M. Sendstad, K. C. Seto, & C. Wilkinson (Eds.), *Urbanization, biodiversity and ecosystem services: Challenges and opportunities* (pp. 175–251). Springer. https://doi.org/10.1007/978-94-007-7088-1_11

- Gong, F., Zheng, Z. C., & Ng, E. (2016). Modeling elderly accessibility to urban green space in high density cities: A case study of Hong Kong. *Procedia Environmental Sciences*, 36, 90-97. <https://doi.org/10.1016/j.proenv.2016.09.018>
- Götzelmann, T., & Kreimeier, J. (2020, June 30 – July 6). *Participation of elderly people in smart city planning by means of virtual reality* [Paper presentation]. The 13th ACM International Conference on Pervasive Technologies Related to Assistive Environments, New York, NY, United States.
- Gozalo, G. R., Morillas, J. M. B., & González, D. M. (2019). Perceptions and use of urban green spaces on the basis of size. *Urban Forestry & Urban Greening*, 46, 126470. <https://doi.org/10.1016/j.ufug.2019.126470>
- Graça, M., Alves, P., Gonçalves, J., Nowak, D., Hoehn, R., Farinha-Marques, P., Cunha, M., 2018. Assessing how green space types affect ecosystem services delivery in Porto, Portugal. *Landscape and Urban Planning*, 170, 195–208. <https://doi.org/10.1016/j.landurbplan.2017.10.007>.
- Greene, M. (2024). Urban green infrastructure: Enhancing climate resilience and environmental sustainability in cities. *International Journal of Environmental Science and Sustainability*, 3(1), 11-21. <https://jilpublishers.com/index.php/ijess/article/view/24>
- Gunawardena, K.R., Wells, M.J., Kershaw, T., 2017. Utilising green and bluespace to mitigate urban heat island intensity. *Science of the Total Environment*, 584, 1040–1055. <https://doi.org/10.1016/j.scitotenv.2017.01.158>.
- Gunnarsson, B., Knez, I., Hedblom, M., & Sang, Å. O. (2017). Effects of biodiversity and environment-related attitude on perception of urban green space. *Urban Ecosystems*, 20, 37-49. DOI 10.1007/s11252-016-0581-x

- Ha, J., Kim, H. J., & With, K. A. (2022). Urban green space alone is not enough: A landscape analysis linking the spatial distribution of urban green space to mental health in the city of Chicago. *Landscape and Urban Planning*, 218, 104309. <https://doi.org/10.1016/j.landurbplan.2021.104309>
- Haaland, C., & van Den Bosch, C. K. (2015). Challenges and strategies for urban green-space planning in cities undergoing densification: A review. *Urban Forestry & Urban Greening*, 14(4), 760-771. <https://doi.org/10.1016/j.ufug.2015.07.009>
- Haase, D., Kabisch, S., Haase, A., Andersson, E., Banzhaf, E., Baró, F., Brenck, M., Fischer, K. L., Frantzeskaki, N., Kabisch, N., Krellenberg, K., Kremer, P., Kronenberg, J., Larondelle, N., Mathey, J., Pauleit, S., Ring, I., Rink, D., Schwarz, N., & Wolff, M. (2017). Greening cities—To be socially inclusive? About the alleged paradox of society and ecology in cities. *Habitat International*, 64, 41–48. <https://doi.org/10.1016/j.habitatint.2017.04.005>
- Haase, D., Wolff, M., & Schumacher, N. (2021). *Mapping mental barriers that prevent the use of neighborhood green spaces*. [https://doi: 10.18452/24539](https://doi.org/10.18452/24539)
- Hansen, R., Rall, E., Chapman, E., Rolf, W., & Pauleit, S. (2017). Urban green infrastructure planning: a guide for practitioners. *Green Surge*. Retrieved from: <https://www.epages.dk/ku/1340/html5/>
- Hao, J., Gao, T., & Qiu, L. (2024). How do species richness and colour diversity of plants affect public perception, preference and sense of restoration in urban green spaces?. *Urban Forestry & Urban Greening*, 100, 128487. <https://doi.org/10.1016/j.ufug.2024.128487>
- Hassan, R., Scholes, R., & Ash, N. (2005). *Ecosystems and human wellbeing: Current state and trends*. Island Press.

- Heckert, M. (2013). Access and equity in greenspace provision: a comparison of methods to assess the impacts of greening vacant Land. *Transactions in GIS*, 17(6), 808–827. <https://doi.org/10.1111/tgis.12000>
- Hesse-Biber, S. N., & Leavy, P. (2006). *The practice of qualitative research*. Sage.
- Hewitt, C. N., Ashworth, K., & MacKenzie, A. R. (2020). Using green infrastructure to improve urban air quality (GI4AQ). *Ambio*, 49(1), 62-73. <https://doi.org/10.1007/s13280-019-01164-3>
- Hof, A., & Schmitt, T. (2011). Urban and tourist land use patterns and water consumption: Evidence from Mallorca, Balearic Islands. *Land Use Policy*, 28(4), 792-804. <https://doi.org/10.1016/j.landusepol.2011.01.007>
- Hooper, P., Foster, S., Edwards, N., Turrell, G., Burton, N., Giles-Corti, B., & Brown, W. J. (2020). Positive HABITATS for physical activity: Examining use of parks and its contribution to physical activity levels in mid-to older-aged adults. *Health & Place*, 63, 102308. <https://doi.org/10.1016/j.healthplace.2020.102308>
- Hudson, D. (2019, July 31). Traffic, construction, loss of open spaces... it is becoming stressful. *Malta Today*. Retrieved September 28, 2024 from https://www.maltatoday.com.mt/lifestyle/health/96562/traffic_construction_loss_of_open_spaces_it_is_becoming_stressful
- Hunter, R. F., Cleland, C., Cleary, A., Droomers, M., Wheeler, B. W., Sinnett, D., Nieuwenhuijsen, M. J., & Braubach, M. (2019). Environmental, health, wellbeing, social and equity effects of urban green space interventions: A meta-narrative evidence synthesis. *Environment International*, 130, 104923. <https://doi.org/10.1016/j.envint.2019.104923>

- Ihlebaek, C., Næss, P., & Stefansdottir, H. (2021). Are compact cities a threat to public health?. *European Planning Studies*, 29(6), 1021-1049. <https://doi.org/10.1080/09654313.2020.1775790>
- Immergluck, D., & Balan, T. (2018). Sustainable for whom? Green urban development, environmental gentrification, and the Atlanta Beltline. *Urban Geography*, 39(4), 546-562. <https://doi.org/10.1080/02723638.2017.1360041>
- Iojă, C. I., Grădinaru, S. R., Onose, D. A., Vânău, G. O., & Tudor, A. C. (2014). The potential of school green areas to improve urban green connectivity and multifunctionality. *Urban Forestry & Urban Greening*, 13(4), 704-713. <https://doi.org/10.1016/j.ufug.2014.07.002>
- Ismayilova, I., & Timpf, S. (2022). Classifying Urban Green Spaces using a combined Sentinel-2 and Random Forest approach. *AGILE: GIScience Series*, 3, 38. <https://doi.org/10.5194/agile-giss-3-38-2022>
- Iveson, K. (1998). Putting the public back into public space. *Urban Policy and Research*, 16(1), 21-33. <https://doi.org/10.1080/08111149808727745>
- Jabbar, M., Yusoff, M. M., & Shafie, A. (2022). Assessing the role of urban green spaces for human well-being: A systematic review. *GeoJournal*, 1-19. <https://doi.org/10.1007/s10708-021-10474-7>
- Jakubec, S. L., Szabo, J., Gleeson, J., Currie, G., & Flessati, S. (2021). Planting seeds of community-engaged pedagogy: Community health nursing practice in an intergenerational campus-community gardening program. *Nurse Education in Practice*, 51, 102980 <https://doi.org/10.1016/j.nepr.2021.102980>

- Jansson, M., Fors, H., Lindgren, T., & Wiström, B. (2013). Perceived personal safety in relation to urban woodland vegetation: A review. *Urban Forestry & Urban Greening*, 12(2), 127-133. <https://doi.org/10.1016/j.ufug.2013.01.005>
- Jennings, V., & Bamkole, O. (2019). The relationship between social cohesion and urban green space: An avenue for health promotion. *International Journal of Environmental Research and Public Health*, 16(3), 452. <https://doi.org/10.3390/ijerph16030452>
- Jupp, V., Davies, P., & Francis, P. (2000). *Doing criminological research*. SAGE Publications. <https://doi.org/10.4135/9780857024404>
- Kabisch, N., Strohbach, M., Haase, D., & Kronenberg, J. (2016). Urban green space availability in European cities. *Ecological Indicators*, 70, 586-596. <http://dx.doi.org/10.1016/j.ecolind.2016.02.029>
- Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective*. Cambridge university press.
- Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of environmental psychology*, 15(3), 169-182. [https://doi.org/10.1016/0272-4944\(95\)90001-2](https://doi.org/10.1016/0272-4944(95)90001-2)
- Kaplan, S., & Berman, M. G. (2010). Directed attention as a common resource for executive functioning and self-regulation. *Perspectives on psychological science*, 5(1), 43-57. <https://doi.org/10.1177/1745691609356784>
- Katz, P. (1994). *The new urbanism: Toward an Architecture of Community*. McGraw-Hill. <http://worldcat.org/isbn/0070338892>.
- Kemperman, A. D., & Timmermans, H. J. (2006). Heterogeneity in urban park use of aging visitors: A latent class analysis. *Leisure Sciences*, 28(1), 57-71. <https://doi.org/10.1080/01490400500332710>

- Kim, S. K., & Wu, L. (2022). Do the characteristics of new green space contribute to gentrification?. *Urban Studies*, 59(2), 360-380. DOI: 10.1177/0042098021989951
- Kimic, K., & Polko, P. (2022). The use of urban parks by older adults in the context of perceived security. *International Journal of Environmental Research and Public Health*, 19(7), 4184. <https://doi.org/10.3390/ijerph19074184>
- Knez, I., & Eliasson, I. (2018). Wellbeing in urban greenery: The role of naturalness and place identity. *Frontiers in Psychology*, 9, 491. <https://doi.org/10.3389/fpsyg.2018.00491>
- Knobel, P., Dadvand, P., & Maneja-Zaragoza, R. (2019). A systematic review of multi-dimensional quality assessment tools for urban green spaces. *Health & place*, 59, 102198. <https://doi.org/10.1016/j.healthplace.2019.102198>
- Knobel, P., Dadvand, P., Alonso, L., Costa, L., Español, M., & Maneja, R. (2021). Development of the urban green space quality assessment tool (RECITAL). *Urban Forestry & Urban Greening*, 57, Article 126895. <https://doi.org/10.1016/j.ufug.2020.126895>
- Kothencz, G., Kolcsár, R., Cabrera-Barona, P., & Szilassi, P. (2017). Urban green space perception and its contribution to well-being. *International Journal of Environmental Research and Public Health*, 14(7), 766. <https://doi.org/10.3390/ijerph14070766>
- Kumar, R. (2011). *Research methodology: A step by step guide for beginners* (3rd ed). Sage publications ltd.

- Kuo, M. (2015). How might contact with nature promote human health? Promising mechanisms and a possible central pathway. *Frontiers in Psychology*, (6)1093, 1-8.
<https://doi.org/10.3389/fpsyg.2015.01093>
- La Rosa, D. (2014). Accessibility to greenspaces: GIS based indicators for sustainable planning in a dense urban context. *Ecological Indicators*, 42, 122-134.
<https://doi.org/10.1016/j.ecolind.2013.11.011>
- Lau, K. K. L., Yung, C. C. Y., & Tan, Z. (2021). Usage and perception of urban green space of older adults in the high-density city of Hong Kong. *Urban Forestry & Urban Greening*, 64, 127251. <https://doi.org/10.1016/j.ufug.2021.127251>
- Leal Filho, W., Barbir, J., Sima, M., Kalbus, A., Nagy, G. J., Paletta, A., ... & Bonoli, A. (2020). Reviewing the role of ecosystems services in the sustainability of the urban environment: A multi-country analysis. *Journal of Cleaner Production*, 262, 121338.
- Leavy, P. (2023). *Research design quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches* (2nd ed). The Guilford Press.
- Leedy, D. P., & Ormrod, P. J. (2015) *Practical research: Planning and design* (11th ed.) Pearson Education Limited
- Leonardi, M. (2023). Nature-based solutions to regenerate Mediterranean cities: A Case Study in Catania, Sicily. *Sustainability*, 15(16), 12112.
<https://doi.org/10.3390/su151612112>
- Leslie, E., Cerin, E., & Kremer, P. (2010). Perceived neighborhood environment and park use as mediators of the effect of area socio-economic status on walking behaviors. *Journal of Physical Activity and Health*, 7(6), 802-810.
<https://doi.org/10.1123/jpah.7.6.802>

- Li, D., Xu, H., Kang, Y., & Steemers, K. (2023). Systematic review: landscape characteristics correlated with physical activity of the elderly people. *Land*, 12(3), 605. <https://doi.org/10.3390/land12030605>
- Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*. 140, 1–55.
- Lin, B. B., Fuller, R. A., Bush, R., Gaston, K. J., & Shanahan, D. F. (2014). Opportunity or orientation? Who uses urban parks and why. *PLoS one*, 9(1), e87422.
- Lin, P.; Lau, S.S.Y.; Qin, H.; Gou, Z. Effects of urban planning indicators on urban heat island: A case study of pocket parks in high-rise high-density environment. *Landsc. Urban Plan.* **2017**, 168, 48–60. <https://doi.org/10.1016/j.landurbplan.2017.09.024>
- Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2011). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (4th ed., pp. 97–128). Sage.
- Litman, T. (2023). Cool walkability planning: Providing pedestrian thermal comfort in hot climate cities. *Journal of Civil Engineering and Environmental Sciences*, 9, 079–086. <https://dx.doi.org/10.17352/2455-488X.000073>
- Lo, A. Y., & Jim, C. Y. (2012). Citizen attitude and expectation towards greenspace provision in compact urban milieu. *Land Use Policy*, 29(3), 577–586. doi:10.1016/j.landusepol.2011.09.011
- Loukaitou-Sideris, A., Levy-Storms, L., Chen, L., & Brozen, M. (2016). Parks for an aging population: Needs and preferences of low-income seniors in Los Angeles. *Journal of the American Planning Association*, 82(3), 236–251. <http://dx.doi.org/10.1080/01944363.2016.1163238>

- Macháč, J., Brabec, J., & Arnberger, A. (2022). Exploring public preferences and preference heterogeneity for green and blue infrastructure in urban green spaces. *Urban Forestry & Urban Greening*, 75, 127695. <https://doi.org/10.1016/j.ufug.2022.127695>
- Macintyre, V. G., Cotterill, S., Anderson, J., Phillipson, C., Benton, J. S., & French, D. P. (2019). “I would never come here because i’ve got my own garden”: Older adults’ perceptions of small urban green spaces. *International Journal of Environmental Research and Public Health*, 16(11), 1994. doi:10.3390/ijerph16111994
- Madanipour, A. (2010). Whose public space? In Madanipour, A. (Ed.), *Whose public space? Integrational case studies in urban design and development* (pp.237-241). Routledge.
- Maddrell, A., & Scriven, R. (2016). Celtic pilgrimage, past and present: from historical geography to contemporary embodied practices. *Social & Cultural Geography*, 17(2), 300-321. <https://doi.org/10.1016/j.socscimed.2013.10.008>
- Main, G., Schembri, J., Speake, J., Gauci, R., & Chester, D. (2021). The city-island-state, wounding cascade, and multi-level vulnerability explored through the lens of Malta. *Area*, 53(2), 272-282. <https://doi.org/10.1111/area.12709>
- Maxwell, J. A. (2012). The importance of qualitative research for casual explanation in education. *Qualitative Inquiry*, 18(8), 655-661. <https://doi.org/10.1177/10778004124528>
- McDonald, R. I., Aronson, M. F., Beatley, T., Beller, E., Bazo, M., Grossinger, R., ... & Spotswood, E. (2023). Denser and greener cities: Green interventions to achieve both urban density and nature. *People and Nature*, 5(1), 84-102. <https://doi.org/10.1002/pan3.10423>

- McDonald, R. I., Biswas, T., Sachar, C., Housman, I., Boucher, T. M., Balk, D., ... & Leyk, S. (2021). The tree cover and temperature disparity in US urbanized areas: Quantifying the association with income across 5,723 communities. *PloS One*, 16(4), <https://doi.org/10.1371/journal.pone.0249715>
- McFarland, A. R., Larsen, L., Yeshitela, K., Engida, A. N., & Love, N. G. (2019). Guide for using green infrastructure in urban environments for stormwater management. *Environmental Science: Water Research & Technology*, 5(4), 643-659. <https://doi.org/10.1039/C8EW00498F>
- McFarlane, C. (2020). De/re-densification: A relational geography of urban density. *City*, 24(1-2), 314-324. <https://doi.org/10.1080/13604813.2020.1739911>
- Merriam, B. S. (2009). *Qualitative research: A guide to design and implementation - revised and expanded from qualitative research and case study applications in education*. Jossey-Bass.
- Mertens, D. M. (2015). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. (4th ed) Sage Publications.
- Micallef, D. (1985). San Anton Gardens (part four). *Civilization*, 25, 673-676. <https://www.um.edu.mt/library/oar/handle/123456789/49148>
- Millennium Ecosystem Assessment. (2005). *Ecosystems and human well-being: Synthesis*. Island Press. <https://www.millenniumassessment.org/documents/document.356.aspx.pdf>
- Min, L., Fangying, G., Jiawei, F., Meixuan, S., & He, Z. (2011). The sustainable approach to the green space layout in high density urban environment: A case study of Macau peninsula. *Procedia Engineering*, 21, 922-928. <https://doi.org/10.1016/j.proeng.2011.11.2095>

- Miralles-Guasch, C., Dopico, J., Delclòs-Alió, X., Knobel, P., Marquet, O., Maneja-Zaragoza, R., Schipperijn, J., & Vich, G. (2019). Natural landscape, infrastructure, and health: The physical activity implications of urban green space composition among the elderly. *International Journal of Environmental Research and Public Health*, 16(20), 3986. <https://doi.org/10.3390/ijerph16203986>
- Mitchell, D. (1995). The end of public space? People's Park, definitions of the public, and democracy. *Annals of the Association of American Geographers*, 85(1), 108-133. <https://doi.org/10.1111/j.1467-8306.1995.tb01797.xa>
- Mizzi, F. (2021). *A policy brief for community gardens in Malta* [Bachelor's thesis, University of Malta]. OAR@UM. <https://www.um.edu.mt/library/oar/handle/123456789/93950>
- Mouratidis, K. (2021). Urban planning and quality of life: A review of pathways linking the built environment to subjective well-being. *Cities*, 115, 103229. <https://doi.org/10.1016/j.cities.2021>
- Mujis, D. (2022). *Doing quantitative work in education with IBM SPSS statistics* (3rd ed.), Sage Publications Inc.
- Muscat, M. (2016). *The shift from vehicular oriented to pedestrian oriented environments : The case of Malta* [Master's thesis, University of Malta]. OAR@UM. <https://www.um.edu.mt/library/oar/handle/123456789/77336>
- Nastos, P., & Saaroni, H. (2024). Living in Mediterranean cities in the context of climate change: A review. *International Journal of Climatology*, 44(10), 3169-3190. <https://doi.org/10.1002/joc.8546>
- National Recreation and Park Association. (2011). Parks & recreation in underserved areas: A public health perspective.

https://www.nrpa.org/uploadedfiles/nrpa.org/publications_and_research/research/papers/parks-rec-underserved-areas.pdf

National Statistics Office. (2023c). *Census of population and housing 2021 final report: Population, migration and other social characteristics volume 1*. National Statistics Office. <https://nso.gov.mt/wp-content/uploads/Census-of-Population-2021-volume1-final.pdf>

Nesbitt, L., Meitner, M. J., Girling, C., Sheppard, S. R., & Lu, Y. (2019). Who has access to urban vegetation? A spatial analysis of distributional green equity in 10 US cities. *Landscape and Urban Planning*, 181, 51-79. <https://doi.org/10.1016/j.landurbplan.2018.08.007>

Newman, A. (2011). Inclusive urban ecological restoration in Toronto, Canada. In D. Egan, E. Hjerpe, & J. Abrams (Eds.), *Human dimensions of ecological restoration: Integrating science, nature, and culture* (pp. 63–75). Island Press. https://doi.org/10.5822/978-1-61091-039-2_5

Newman, P. and Kenworthy, J. (1992) *Winning back the cities*. Pluto Press. <http://worldcat.org/isbn/0949138843>

Nieuwenhuijsen, M. J. (2021). New urban models for more sustainable, liveable and healthier cities post covid19; reducing air pollution, noise and heat island effects and increasing green space and physical activity. *Environment International*, 157, 106850. <https://doi.org/10.1016/j.envint.2021.106850>

Noaks, L., & Wincup, E. (2004). *Criminological research*. SAGE Publications. <https://doi.org/10.4135/9781849208789>

- Noël, C., Landschoot, L. V., Vanroelen, C., & Gadeyne, S. (2021). Social barriers for the use of available and accessible public green spaces. *Frontiers in Sustainable Cities*, 3, 744766. <https://doi.org/10.3389/frsc.2021.744766>
- O’Leary, Z. (2009). *The essential guide to doing your research project* (3rd ed). Sage publications ltd.
- Onose, D. A., Iojă, I. C., Niță, M. R., Vânău, G. O., & Popa, A. M. (2020). Too old for recreation? How friendly are urban parks for elderly people?. *Sustainability*, 12(3), 790. <https://doi-org.ejournals.um.edu.mt/10.3390/su12030790>
- Ostoić, S. K., van den Bosch, C. C. K., Vuletić, D., Stevanov, M., Živojinović, I., Mutabdžija-Bećirović, S., ... & Malovrh, Š. P. (2017). Citizens’ perception of and satisfaction with urban forests and green space: Results from selected Southeast European cities. *Urban Forestry & Urban Greening*, 23, 93-103. <https://doi.org/10.1016/j.ufug.2017.02.005>
- Ostrowska, J. (2023). *Restorative potential of green and blue spaces on the example of the Maltese Islands* [Bachelor’s thesis, University of Malta]. OAR@UM. <https://www.um.edu.mt/library/oar/handle/123456789/115698>
- Ottoni, C. A., Sims-Gould, J., Winters, M., Heijnen, M., & McKay, H. A. (2016). “Benches become like porches”: Built and social environment influences on older adults’ experiences of mobility and wellbeing. *Social Science & Medicine*, 169, 33-41. <https://doi.org/10.1016/j.socscimed.2016.08.044>
- Pace, A., Attard, M., Camilleri, M., & Valentino, G. (2023). Urban Growth in a Mediterranean Island-State: A Data-Driven Study of Malta’s Development Permits in the Last Thirty Years. *Sustainability*, 15(22), 16063. <https://doi.org/10.3390/su152216063>

- Palliwoda, J., & Priess, J. (2021). What do people value in urban green? Linking characteristics of urban green spaces to users' perceptions of nature benefits, disturbances, and disservices. *Ecology and Society*, 26(1). <https://doi.org/10.5751/ES-12204-260128>
- Panduro, T. E., & Veie, K. L. (2013). Classification and valuation of urban green spaces—A hedonic house price valuation. *Landscape and Urban Planning*, 120, 119-128. <https://doi.org/10.1016/j.landurbplan.2013.08.009>
- Park, K. (2017). Psychological park accessibility: a systematic literature review of perceptual components affecting park use. *Landscape Research*, 42(5), 508-520. <https://doi.org/10.1080/01426397.2016.1267127>
- Patten, L. M., & Newhart, M. (2018). *Understanding research methods: An overview of the essentials* (10th ed.) Routledge. <https://doi.org/10.4324/9781315266312>
- Patterson, M. (2010, March). *What makes public space public?* [Paper presentation] Michigan Social Theory Conference, Ann Arbor, MI, United States. Retrieved from http://individual.utoronto.ca/matt_page/patterson_2010_publicspace.pdf
- Perry, M., Cotes, L., Horton, B., Kunac, R., Snell, I., Taylor, B., ... & Devan, H. (2021). “Enticing” but not necessarily a “space designed for me”: experiences of urban park use by older adults with disability. *International Journal of Environmental Research and Public Health*, 18(2), 552. <https://doi.org/10.3390/ijerph18020552>
- Peschardt, K. K., Schipperijn, J., & Stigsdotter, U. K. (2012). Use of small public urban green spaces (SPUGS). *Urban Forestry & Urban Greening*, 11(3), 235-244. <https://doi.org/10.1016/j.ufug.2012.04.002>

- Peters, K., Elands, B., & Buijs, A. (2010). Social interactions in urban parks: Stimulating social cohesion? *Urban Forestry & Urban Greening*, 9(2), 93-100. <https://doi.org/10.1016/j.ufug.2009.11.003>
- Pham, T., Apparicio, P., Landry, S., & Lewnard, J. (2017). Disentangling the effects of urban form and socio-demographic context on street tree cover: A multi-level analysis from Montréal. *Landscape and Urban Planning*, 157, 422-433. <http://dx.doi.org/10.1016/j.landurbplan.2016.09.001>
- Picard, P., & Tran, T. (2021). Small urban green areas. *Journal of Environmental Economics and Management*, 106, 102418. <https://doi.org/10.1016/j.jeem.2021.102418e>
- Pisani, E. (2022). Public's attitudes towards greener buildings and infrastructure within the Maltese built environment and public spaces [Master's thesis, University of Malta]. OAR@UM. <https://www.um.edu.mt/library/oar/handle/123456789/108243>
- Pitas, N. A., Rose, J., Mullenbach, L., & Hoyle-Katz, A. (2021). The management of parks and public spaces in the context of unsheltered homelessness: Perspectives from three key stakeholder groups. *Journal of Park and Recreation Administration*. <https://doi.org/10.18666/JPRA-2024-12590>
- Plane, J., & Klodawsky, F. (2013). Neighbourhood amenities and health: Examining the significance of a local park. *Social Science & Medicine*, 99, 1-8. <https://doi.org/10.1016/j.socscimed.2013.10.00>
- Pleson, E., Nieuwendyk, L. M., Lee, K. K., Chaddah, A., Nykiforuk, C. I., & Schopflocher, D. (2014). Understanding older adults' usage of community green spaces in Taipei, Taiwan. *International Journal of Environmental Research and Public Health*, 11(2), 1444-1464. <https://doi.org/10.3390/ijerph110201444>

- Portelli, M. S., Conrad, E., & Galdies, C. (2020). Developing an environmental justice index for small island states: The case of Malta. *Sustainability*, 12(22), 9519. <https://doi.org/10.3390/su12229519>
- Qin, J., Zhou, X., Sun, C., Leng, H., & Lian, Z. (2013). Influence of green spaces on environmental satisfaction and physiological status of urban residents. *Urban Forestry & Urban Greening*, 12(4), 490-497. <http://dx.doi.org/10.1016/j.ufug.2013.05.005>
- Rabianski, J. S. (2003). Primary and secondary data: Concepts, concerns, errors, and issues. *The Appraisal Journal*, 71(1), 43.
- Rahtz, E., Bell, S. L., Nurse, A., Wheeler, B. W., Guell, C., Elliott, L. R., ... & Lovell, R. (2023). What is known about what works in community-involved decision-making relating to urban green and blue spaces? A realist review protocol. *Systematic Reviews*, 12(1), 169. <https://doi.org/10.1186/s13643-023-02333-y>
- Rall, E., Bieling, C., Zytynska, S., & Haase, D. (2017). Exploring city-wide patterns of cultural ecosystem service perceptions and use. *Ecological Indicators*, 77, 80-95. <http://dx.doi.org/10.1016/j.ecolind.2017.02.001>.
- Rasidi, M. H., Jamirsah, N., & Said, I. (2012). Urban green space design affects urban residents' social interaction. *Procedia-Social and Behavioral Sciences*, 68, 464-480. <https://doi.org/10.1016/j.sbspro.2012.12.242>
- Rémillard-Boilard, S., Buffel, T., & Phillipson, C. (2017). Involving older residents in age-friendly developments: from information to coproduction mechanisms. *Journal of Housing for the Elderly*, 31(2), 146-159. <https://doi.org/10.1080/02763893.2017.1309932>

- Reyes-Riveros, R., Altamirano, A., De La Barrera, F., Rozas-Vásquez, D., Vieli, L., & Meli, P. (2021). Linking public urban green spaces and human wellbeing: A systematic review. *Urban Forestry & Urban Greening*, 61, 127105. <https://doi.org/10.1016/j.ufug.2021.127105>
- Ribeiro, A. I., Mitchell, R., Carvalho, M. S., & de Pina, M. D. F. (2013). Physical activity-friendly neighbourhood among older adults from a medium size urban setting in Southern Europe. *Preventive Medicine*, 57(5), 664-670. <https://doi.org/10.1016/j.ypmed.2013.08.033>
- Rigolon, A. (2016). A complex landscape of inequity in access to urban parks: A literature review. *Landscape and Urban Planning*, 153, 160-169. <http://dx.doi.org/10.1016/j.landurbplan.2016.05.017>
- Rigolon, A., & Németh, J. (2018). What shapes uneven access to urban amenities? Thick injustice and the legacy of racial discrimination in Denver's parks. *Journal of Planning Education and Research*, 41(3), 312-325. <https://doi.org/10.1177/0739456X18789251>
- Rigolon, A., & Németh, J. (2020). Green gentrification or 'just green enough': Do park location, size and function affect whether a place gentrifies or not? *Urban Studies*, 57(2), 402-420. <https://doi.org/10.1177/0042098019849380>
- Rigolon, A., Browning, M. H., McAnirlin, O., & Yoon, H. (2021). Green space and health equity: a systematic review on the potential of green space to reduce health disparities. *International Journal of Environmental Research and Public Health*, 18(5), 2563. <https://doi.org/10.3390/ijerph18052563>

- Rigolon, A., Keith, S. J., Harris, B., Mullenbach, L. E., Larson, L. R., & Rushing, J. (2020). More than" just green enough": helping park professionals achieve equitable greening and limit environmental gentrification. *Journal of Park & Recreation Administration*, 38(3) 29-54. <https://doi.org/10.18666/JPra-2019-9654>
- Rojas, C., Páez, A., Barbosa, O., & Carrasco, J. (2016). Accessibility to urban green spaces in Chilean cities using adaptive thresholds. *Journal of Transport Geography*, 57, 227-240. <https://doi.org/10.1016/j.jtrangeo.2016.10.012>
- Saelens, B. E., Frank, L. D., Auffrey, C., Whitaker, R. C., Burdette, H. L., & Colabianchi, N. (2006). Measuring physical environments of parks and playgrounds: EAPRS instrument development and inter-rater reliability. *Journal of Physical Activity and Health*, 3(s1), S190-S207. <https://doi.org/10.1123/jpah.3.s1.s190>
- Salata, K. D., & Yiannakou, A. (2023). A methodological tool to integrate theoretical concepts in climate change adaptation to spatial planning. *Sustainability*, 15(3), 2693. <https://doi.org/10.3390/su15032693>.
- Sang, Å. O., Knez, I., Gunnarsson, B., & Hedblom, M. (2016). The effects of naturalness, gender, and age on how urban green space is perceived and used. *Urban Forestry & Urban Greening*, 18, 268-276. <http://dx.doi.org/10.1016/j.ufug.2016.06.008>
- Satariano, W. A., Guralnik, J. M., Jackson, R. J., Marottoli, R. A., Phelan, E. A., & Prohaska, T. R. (2012). Mobility and aging: New directions for public health action. *American Journal of Public Health*, 102(8), 1508-1515. <https://doi:10.2105/AJPH.2011.300631>
- Sax, D. L., Nesbitt, L., & Quinton, J. (2022). Improvement, not displacement: A framework for urban green gentrification research and practice. *Environmental Science & Policy*, 137, 373-383. <https://doi.org/10.1016/j.envsci.2022.09.013>

- Scerri, K. (2020). *Streets, stress, and society: The impacts of the urban environment and transport on the population's mental well-being* [Master's thesis, University of Malta]. OAR@UM.
<https://www.um.edu.mt/library/oar/handle/123456789/57432>oai:www.um.edu.mt:123456789/57432
- Scerri, L. J. (n.d.). Gardens of Malta: Buskett. *Heritage: An Encyclopedia Of Maltese Culture And Civilisation*, 66, 1284-1285.
<https://www.um.edu.mt/library/oar/handle/123456789/47895>
- Scheiber, S. (2020). A mixed method approach to develop proposals for Malta's urban open spaces to act as green infrastructure. *ECQI 2020 PROCEEDINGS*, 92.
- Scheiber, S. (2021). *Urban open spaces and their potential as green infrastructure* [Doctoral thesis, University of Malta]. OAR@UM.
<https://www.um.edu.mt/library/oar/handle/123456789/94803>
- Scheiber, S. (2022). Re-designing urban open spaces to act as green infrastructure-the case of Malta. *Transportation Research Procedia*, 60, 148-155.
<https://doi.org/10.1016/j.trpro.2021.12.020>
- Scheiber, S. (2023). Reimagining our urban environments and exploring the potential for more sustainable futures through qualitative inquiry. In N. Fairchild (Ed.), *6th European congress of qualitative inquiry qualitative inquiry in the Anthropocene: Affirmative and generative possibilities for (Post)Anthropocentric futures* (pp. 185-195). Portsmouth: University of Portsmouth. <https://www.um.edu.mt/library/oar/handle/123456789/112959>
- Scheiber, S., & Zucaro, F. (2023). Urban open and green spaces: Is Malta planning and designing them to increase resilience? *TeMA - Journal of Land Use, Mobility and Environment*, 16(2), 331-352. <https://doi.org/10.6093/1970-9870/9951>

- Schindler, M., Le Texier, M., & Caruso, G. (2018). Spatial sorting, attitudes and the use of green space in Brussels. *Urban Forestry and Urban Greening*, 31, 169–184. <https://doi.org/10.1016/j.ufug.2018.02.009>
- Schindler, M., Le Texier, M., & Caruso, G. (2022). How far do people travel to use urban green space? A comparison of three European cities. *Applied Geography*, 141, 102673. <https://doi.org/10.1016/j.apgeog.2022.102673>
- Schmidt, T., Kerr, J., & Schipperijn, J. (2019). Associations between neighbourhood open space features and walking and social interaction in older adults—a mixed methods study. *Geriatrics*, 4(3), 41. doi:10.3390/geriatrics4030041
- Schutt, R. K. (2012). *Investigating the social world: The process and practice of research* (7th ed.). Sage Publications.
- Seaman, P. J., Jones, R., & Ellaway, A. (2010). It's not just about the park, it's about integration too: why people choose to use or not use urban greenspaces. *International Journal of Behavioral Nutrition and Physical Activity*, 7(1), 1-9. <https://doi.org/10.1186/1479-5868-7-78>
- Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (3rd ed.). Teachers College Press.
- Shi, Y., Xiang, Y., Zhang, Y., 2019. Urban design factors influencing surface urban Heat Island in the high-density City of Guangzhou based on the local climate zone. *Sensors*, 19(16). <https://doi.org/10.3390/s19163459>
- Shooshtarian, S., Rajagopalan, P., Sagoo, A., 2018. A comprehensive review of thermal adaptive strategies in outdoor spaces. *Sustainable Cities and Society*, 41, 647–665. <https://doi.org/10.1016/j.scs.2018.06.005>.
- Smyth, F. (2005). Medical geography: therapeutic places, spaces and networks. *Progress in human geography*, 29(4), 488-495. <https://doi.org/10.1191/0309132505ph562pr>

- Sparling, P. B., Howard, B. J., Dunstan, D. W., & Owen, N. (2015). Recommendations for physical activity in older adults. *BMJ*, 350. <https://doi.org/10.1136/bmj.h100>
- Sreetheran, M., & Van Den Bosch, C. C. K. (2014). A socio-ecological exploration of fear of crime in urban green spaces—A systematic review. *Urban Forestry & Urban Greening*, 13(1), 1-18. <https://doi.org/10.1016/j.ufug.2013.11.006>
- Stahle, A. (2010). More green space in a denser city: Critical relations between user experience and urban form . *Urban Design International*, 15, 47–67. <https://doi:10.1057/udi.2009.27>
- Stessens, P., Khan, A. Z., Huysmans, M., & Canters, F. (2017). Analysing urban green space accessibility and quality: A GIS-based model as spatial decision support for urban ecosystem services in Brussels. *Ecosystem Services*, 28, 328-340. <https://doi.org/10.1016/j.ecoser.2017.10.016>
- Studjurban, & Studio Tom Van Malderen. (2021). *Slow streets*. Local Councils' Association Malta. <https://www.lca.org.mt/wp-content/uploads/2022/03/Attard.pdf>
- Sugiyama, T., Cole, R., Koohsari, M. J., Kynn, M., Sallis, J. F., & Owen, N. (2019). Associations of local-area walkability with disparities in residents' walking and car use. *Preventive Medicine*, 120, 126-130. <https://doi.org/10.1016/j.ypmed.2019.01.017>
- Sugiyama, T., Francis, J., Middleton, N. J., Owen, N., & Giles-Corti, B. (2010). Associations between recreational walking and attractiveness, size, and proximity of neighborhood open spaces. *American Journal of Public Health*, 100(9), 1752-1757. <https://doi.org/10.2105/AJPH.2009.182006>
- Suleiman, L., Olofsson, B., Saurí, D., Palau-Rof, L., 2020. A breakthrough in urban rain-harvesting schemes through planning for urban greening: case studies from

- Stockholm and Barcelona. *Urban Forestry & Urban Greening*, 51, 126678
<https://doi.org/10.1016/j.ufug.2020.126678>.
- Sultana, D. (2024). A Land Use and Land Use Change Study of the Maltese Islands (1998-2012). *Xjenza Online*, 12(2), 135–151. <https://DOI: 10.7423/XJENZA.2024.3.04>
- Suomalainen, S., Tahvonen, O., & Kahiluoto, H. (2022). From Participation to Involvement in Urban Open Space Management and Maintenance. *Sustainability*, 14(19), 12697. <https://doi.org/10.3390/su141912697>
- Swanwick, C., Dunnett, N., & Woolley, H. (2003). Nature, role and value of green space in towns and cities: An overview. *Built Environment*, 29(2), 94-106.
- Ta, N., Li, H., Chai, Y., & Wu, J. (2021). The impact of green space exposure on satisfaction with active travel trips. *Transportation Research Part D: Transport and Environment*, 99, 103022. <https://doi.org/10.1016/j.trd.2021.103022>
- Tan, X., Sun, X., Huang, C., Yuan, Y., & Hou, D. (2021). Comparison of cooling effect between green space and water body. *Sustainable Cities and Society*, 67, 102711. <https://doi.org/10.1016/j.scs.2021.102711>
- Tan, Z., Lau, K. K. L., Roberts, A. C., Chao, S. T. Y., & Ng, E. (2019). Designing urban green spaces for older adults in Asian cities. *International Journal of Environmental Research and Public Health*, 16(22), 4423. <https://doi:10.3390/ijerph16224423>
- Terefe, A. E., & Hou, Y. (2024). Determinants influencing the accessibility and use of urban green spaces: A review of empirical evidence. *City and Environment Interactions*, 100159. <https://doi.org/10.1016/j.cacint.2024.100159>
- Thompson, C. W., Roe, J., Aspinall, P., Mitchell, R., Clow, A., & Miller, D. (2012). More green space is linked to less stress in deprived communities: Evidence from salivary

- cortisol patterns. *Landscape and Urban Planning*, 105(3), 221-229.
<https://doi.org/10.1016/j.landurbplan.2011.12.015>
- Tolich, M. (Ed.). (2016). *Qualitative ethics in practice*. Left Coast Press.
<https://doi.org/10.4324/9781315544984>
- Trochim, W. M., & Donnelly, J. P. (2006). *Research methods knowledge base* (3rd ed.). Macmillan Publishing Company.
- Tsiatinis, A. (2023). Nature-based solutions and green infrastructures in the urban cultural heritage sites: case study of Limassol. [Master's Thesis, Politecnico Milano] Politesi Libraries And Archives. <https://hdl.handle.net/10589/223371>.
- Twohig-Bennett, C., & Jones, A. (2018). The health benefits of the great outdoors: A systematic review and meta-analysis of greenspace exposure and health outcomes. *Environmental Research*, 166, 628-637.
<https://doi.org/10.1016/j.envres.2018.06.030>
- United Nations. (n.d.). Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. *United Nations Department of Economic and Social Affairs*. Retrieved January 30, 2025, from <https://sdgs.un.org/goals/goal11>
- Vallance, S., Perkins, H. C., & Dixon, J. E. (2011). What is social sustainability? A clarification of concepts. *Geoforum*, 42(3), 342-348. <https://doi.org/10.1016/j.geoforum.2011.01.002>
- Van Cauwenberg, J., Clarys, P., De Bourdeaudhuij, I., Van Holle, V., Verté, D., De Witte, N., ... & Deforche, B. (2012). Physical environmental factors related to walking and cycling in older adults: The Belgian aging studies. *BMC Public Health*, 12(1), 1-13. <https://doi.org/10.1186/1471-2458-12-142>

- Van Cauwenberg, J., Van Holle, V., De Bourdeaudhuij, I., Van Dyck, D., & Deforche, B. (2016). Neighborhood walkability and health outcomes among older adults: The mediating role of physical activity. *Health & place*, 37, 16-25. <https://doi.org/10.1016/j.healthplace.2015.11.003>
- Varentsov, M., Vasenev, V., Dvornikov, Y., Samsonov, T., & Klimanova, O. (2023). Does size matter? Modelling the cooling effect of green infrastructures in a megacity during a heat wave. *Science of the Total Environment*, 902, 165966. <https://doi.org/10.1016/j.scitotenv.2023.165966>
- Vich, G., Delclòs-Alió, X., Maciejewska, M., Marquet, O., Schipperijn, J., & Miralles-Guasch, C. (2021). Contribution of park visits to daily physical activity levels among older adults: Evidence using GPS and accelerometry data. *Urban Forestry & Urban Greening*, 63. <https://doi.org/10.1016/j.ufug.2021.127225>
- Wan, C., Shen, G. Q., & Choi, S. (2021). Underlying relationships between public urban green spaces and social cohesion: A systematic literature review. *City, culture and society*, 24, 100383. <https://doi.org/10.1016/j.ccs.2021.100383>
- Wang, P., Han, L., & Mei, R. (2022). An impact asymmetry analysis of small urban green space attributes to enhance visitor satisfaction. *International Journal of Environmental Research and Public Health*, 19(5), 2922. <https://doi.org/10.3390/ijerph19052922>
- Wang, P., Zhou, B., Han, L., & Mei, R. (2021). The motivation and factors influencing visits to small urban parks in Shanghai, China. *Urban Forestry & Urban Greening*, 60, 127086. <https://doi.org/10.1016/j.ufug.2021.127086>

- Wang, R., Zhao, J., Meitner, M. J., Hu, Y., & Xu, X. (2019). Characteristics of urban green spaces in relation to aesthetic preference and stress recovery. *Urban Forestry & Urban Greening*, 41, 6-13. <https://doi.org/10.1016/j.ufug.2019.03.005>
- Wang, S., Yung, E. H. K., & Sun, Y. (2022). Effects of open space accessibility and quality on older adults' visits: Planning towards equal right to the city. *Cities*, 125, 103611. <https://doi.org/10.1016/j.cities.2022.103611>
- Watson, A. (2021). "Placing" participant observation. In I. Hay & M. Cope. (Eds.), *Qualitative research methods in human geography (5th ed.)*. Oxford University Press.
- Wen, C., Albert, C., & Von Haaren, C. (2018). The elderly in green spaces: Exploring requirements and preferences concerning nature-based recreation. *Sustainable cities and society*, 38, 582-593. <https://doi.org/10.1016/j.scs.2018.01.023>
- Wendel, H. E. W., Zarger, R. K., & Mihelcic, J. R. (2012). Accessibility and usability: Green space preferences, perceptions, and barriers in a rapidly urbanizing city in Latin America. *Landscape and Urban Planning*, 107(3), 272-282. <http://dx.doi.org/10.1016/j.landurbplan.2012.06.003>
- Williams, A. (2002). Changing geographies of care: employing the concept of therapeutic landscapes as a framework in examining home space. *Social science & medicine*, 55(1), 141-154. [https://doi.org/10.1016/S0277-9536\(01\)00209-X](https://doi.org/10.1016/S0277-9536(01)00209-X)
- Williams, T. G., Logan, T. M., Zuo, C. T., Liberman, K. D., & Guikema, S. D. (2020). Parks and safety: a comparative study of green space access and inequity in five US cities. *Landscape and Urban Planning*, 201, 1038-41. <https://doi.org/10.1016/j.landurbplan.2020.103841>

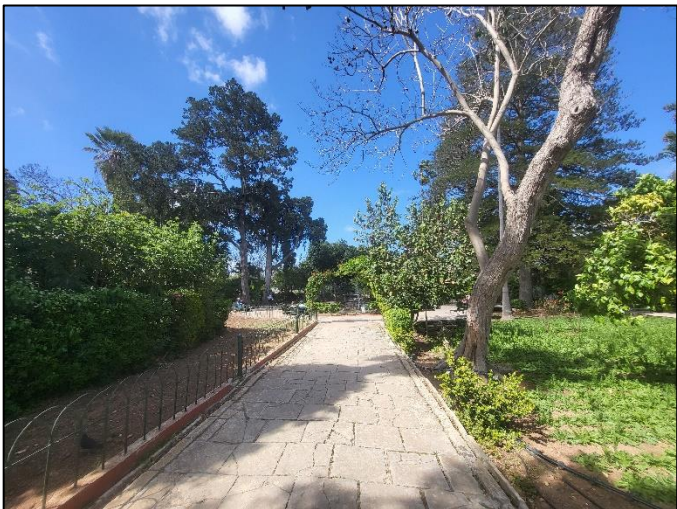
- Wolch, J. R., Byrne, J., & Newell, J. P. (2014). Urban green space, public health, and environmental justice: The challenge of making cities 'just green enough'. *Landscape and Urban Planning*, 125, 234-244. <http://dx.doi.org/10.1016/j.landurbplan.2014.01.017>
- Wood, L., Hooper, P., Foster, S., & Bull, F. (2017). Public green spaces and positive mental health—investigating the relationship between access, quantity and types of parks and mental wellbeing. *Health & Place*, 48, 63-71. <http://dx.doi.org/10.1016/j.healthplace.2017.09.002>
- World Health Organization. (2007). *Global age-friendly cities: A guide*. https://iris.who.int/bitstream/handle/10665/43755/9789241547307_eng.pdf?sequence=1
- World Health Organization. (2010). *Global recommendations on physical activity for health*. <https://www.who.int/publications/i/item/9789241599979>
- World Health Organization. (2016). *Urban green spaces and health* (No. WHO/EURO: 2016-3352-43111-60341). Regional Office for Europe. <https://iris.who.int/handle/10665/345751>
- World Health Organization. (2020). *Healthy ageing and functional ability*. <https://www.who.int/news-room/questions-and-answers/item/healthy-ageing-and-functional-ability>
- Wu, J. (2020). Dismantling the fence for social justice? Evidence based on the inequity of urban green space accessibility in the central urban area of Beijing. *Urban Analytics and City Science*, 47(4), 626–644. [https://doi: 10.1177/2399808318793139](https://doi:10.1177/2399808318793139)

- Xerri, F. (2011). *An urban geography inquiry : A case study of the urban morphology of Attard as a preliminary study in urban planning* [Bachelor's thesis, University of Malta]. OAR@UM. <https://www.um.edu.mt/library/oar/handle/123456789/4412>
- Xu, T., Nordin, N. A., & Aini, A. M. (2022). Urban green space and subjective well-being of older people: A systematic literature review. *International Journal of Environmental Research and Public Health*, 19(21), 14227. <https://doi.org/10.3390/ijerph192114227>
- Yan, T., Leng, H., & Yuan, Q. (2023). The Role of “Nostalgia” in Environmental Restorative Effects from the Perspective of Healthy Aging: Taking Changchun Parks as an Example. *Land*, 12(9), 1817. <https://doi.org/10.3390/land12091817>
- Ye, C., Hu, L., & Li, M. (2018). Urban green space accessibility changes in a high-density city: A case study of Macau from 2010 to 2015. *Journal of Transport Geography*, 66, 106-115. <https://doi.org/10.1016/j.jtrangeo.2017.11.009>
- Yen, I. H., Fandel Flood, J., Thompson, H., Anderson, L. A., & Wong, G. (2014). How design of places promotes or inhibits mobility of older adults: Realist synthesis of 20 years of research. *Journal of Aging and Health*, 26(8), 1340-1372. <https://doi.org/10.1177/0898264314527610>
- Younes, S. R., Marques, B., & McIntosh, J. (2024). Public Spaces for Older People: A Review of the Relationship between Public Space to Quality of Life. *Sustainability*, 16(11), 4583. <https://doi.org/10.3390/su16114583>
- Yung, E. H. K., Ho, W. K. O., & Chan, E. H. W. (2017). Elderly satisfaction with planning and design of public parks in high density old districts: An ordered logit model. *Landscape and Urban Planning*, 165, 39–53. <https://doi.org/10.1016/j.landurbplan.2017.05.006>

- Zammit, M. L. (2023, May 23). These 16 public spaces are to be upgraded in a €10 million greening scheme. *Times Of Malta*. Retrieved September 10, 2024 from <https://timesofmalta.com/article/16-public-spaces-upgraded-10-million-greening-scheme.1033298>
- Zhang, R., Huang, L., & Wang, H. (2023). Accessibility improvement and renewal of urban park green space for the elderly and the disabled. *Forests*, *14*(9), 1801. <https://doi.org/10.3390/f14091801>
- Zhang, Y., Van den Berg, A. E., Van Dijk, T., & Weitkamp, G. (2017). Quality over quantity: Contribution of urban green space to neighborhood satisfaction. *International Journal of Environmental Research and Public Health*, *14*(5), 535. <https://doi:10.3390/ijerph14050535>
- Zou, H., & Wang, X. (2021). Progress and gaps in research on urban green space morphology: A review. *Sustainability*, *13*(3), 1202. <https://doi.org/10.3390/su13031202>

Appendices

Appendix A: List of UGSs in the localities understudy

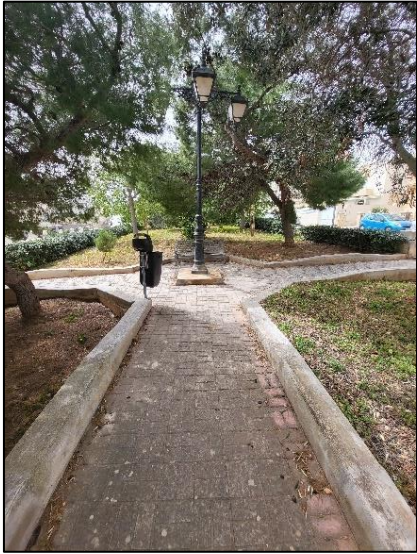
UGSs in Attard	
UGS A1: San Anton Gardens (Il-Ġnien ta' Sant' Anton) Triq Birbal	
UGS A2: Untitled UGS Triq L-Imdina	

UGS A3: Attard Cemetery Triq L-Imdina	
UGS A4: Il-Ġardina Emvin Cremona Triq Qrib' Sant' Anton	

UGS A5: Ġnien L-Istazzjon St. Anthony Street	
UGS A6: Ġardina Jon Borġ Botanista Triq il-Linja	

UGS A7: Ġnien Tomasso Dingli Triq il-Knisja	
UGS A8: Ġnien Palma Triq il-Mosta	

UGS A9: Ġnien Warda Triq Xatbet L-Art	
UGS A10: Il-Ġardina tal-Kromb Triq id-Deffun	

UGS A11: Ġardina Pierre Muscat Triq il-Linja	
UGS A12: Misraħ Kola Triq il-Linja	
UGS A13: Misraħ Ġwanni Pawlu t-Tieni Triq il-Pitakli	

UGS A14: Untitled UGS Triq Il-Marg	
UGS A15: Untitled UGS Triq tal-Fulkar	

UGS A16: Ġnien il-Kunsill Triq il-Minfah	
UGS A17: Untitled UGS Triq Il-Linja	

UGSs in Marsa

UGS M1: Untitled UGS

Triq N. Sacco

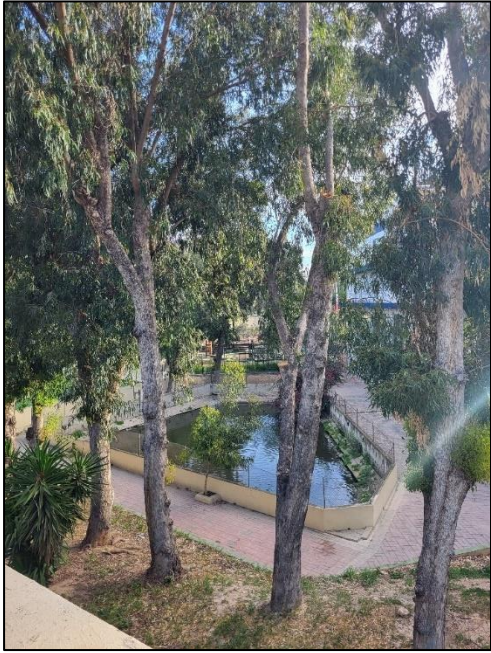


UGS M2: Untitled UGS

Triq il-Kungress



UGS M3: Tas-Samra Triq Stiefnu Żerafa	
UGS M4: Spencer Garden (Ġnien Spencer) Triq Diċembru Tlettax	This UGS was under renovation during the data collection phase of this study. The UGS has been included in the list of UGSs present in the locality of Marsa and features in maps produced by the author of UGSs in this locality. However, the UGS could not be included in the observation exercise.

UGS M5: Untitled UGS Triq Is-Salib Tal-Marsa	
UGS M6: Untitled UGS Triq Dom Mintoff	

UGS M7: Untitled UGS Triq il-Marsa	
UGS M8: Untitled UGS Triq is-Sliem	
UGS M9: Untitled UGS Triq tat-Tromba	

UGSs in Qormi

**UGS Q1: Ġnien
De La Cruz**

**Triq Manwel
Dimech**

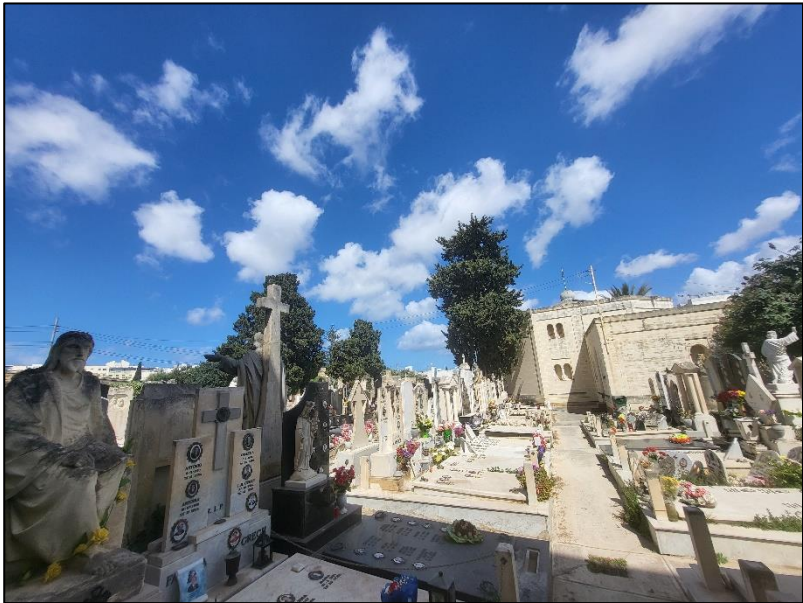


**UGS Q2:
Qormi Sports
and Fitness
Park**

**Triq Manwel
Dimech**



UGS Q3: Untitled UGS Triq Il-Kus	
UGS Q4: Untitled UGS Triq 25 Ta' Mejj	

UGS Q5: L-Armier Public Garden Triq il-Pjazza	
UGS Q6: Qormi Cemetry Triq il-Belt	

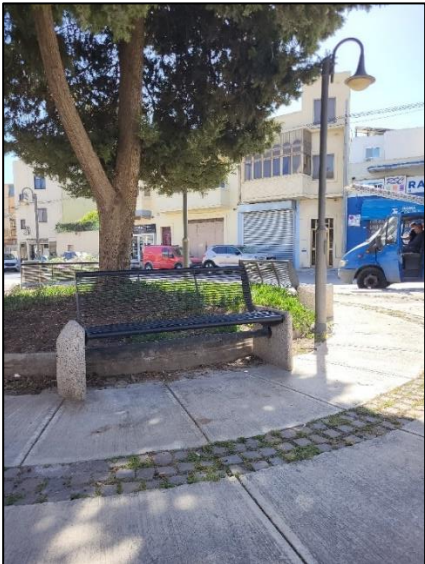
UGS Q7: Untitled UGS Triq il-Wied	 A photograph of a landscaped urban area. In the foreground, there is a paved path made of reddish-brown bricks. To the left of the path is a low white concrete wall. To the right is a raised garden bed filled with various green plants and shrubs. In the background, there are several multi-story residential buildings with balconies. A red metal structure, possibly a pergola or a small bridge, is visible in the middle ground. The sky is blue with some clouds.
UGS Q8: Ġnien Federico Maempel Triq L-Isqof Scicluna	 A photograph of a paved path in a park-like setting. The path is made of light-colored bricks and is lined with large, mature trees that cast shadows on the path. On the left side of the path, there is a red metal bench. In the background, there are more trees and a building. The sky is blue.

UGS Q9: Ġnejnet il-Kan. Karm Grech Triq L-Isqof Scicluna	
UGS Q10: Untitled UGS Triq Bhajra	

UGS Q11: Ġnien il-Volontarjat Triq Is-Sajf	
UGS Q12: Untitled UGS Triq id-Deheb Fin	
UGS Q13: Untitled UGS Triq id-Deheb Fin	

UGS Q14: Untitled UGS Triq Id-Deheb Fin	
UGS Q15: Untitled UGS Triq Id-Deheb Fin	

UGS Q16: Untitled UGS Triq ir-Rebbiegħa	
UGS Q17: Untitled UGS Triq il-Ħelsien	

UGS Q18: Untitled UGS Triq il-Ħelsien	
UGS Q19: Untitled UGS Triq il-Vitorja	

UGS Q20: Ġnien Ġeorge Hyzler Triq Alexandra	
UGS Q21: Untitled UGS Triq Ġuże	

UGS Q22: Untiteld UGS Triq il-Vitorja	
UGS Q23: Untiteld UGS Triq il-Ġebbieda	

All photos were taken by the author of the study.

Appendix B: UGS observation scoring sheet

Tool name: RECITAL - (uRban grEen spaCe qualITy Assessment tool)

Adapted from: Knobel, P., Dadvand, P., Alonso, L., Costa, L., Español, M., & Maneja, R. (2021). Development of the urban green space quality assessment tool (RECITAL). *Urban Forestry & Urban Greening*, 57, 126895. <https://doi.org/10.1016/j.ufug.2020.126895>

Guidelines for scoring RECITAL items.

Scoring methods	Scores				
	0	1	2	3	4
Quantity	No presence	Almost no presence	Present in some areas	Mostly present	Always present
Quality	No presence	Poorly maintained and aesthetically unpleasant	Poorly maintained or aesthetically unpleasant	Well maintained and aesthetically pleasant	Exceptionally maintained and aesthetically pleasing
Combined quantity and quality	Not present	Not fit for purpose	Fit but need repair or insufficient amount	Fit and sufficient.	Fit, sufficient, and aesthetically pleasing.
Reversed quantity	Always present	Mostly present	Present in some areas	Almost no presence	No presence
Potential use	Activity completely impossible	Activity possible but with many limitations	Activity possible with some limitations	Good conditions for the activity.	Perfect conditions for the activity.
Braun-Blanquet (adaptation from Braun-Blanquet (1932))	5 % or less cover	5 % to 25 % cover	25 % to 50 % cover	50 % to 75 % cover	75 % or more cover

Urban Green Space code and name: _____

Street: _____

Dimensions	Dimension description	Item	Type of scoring	Score
Surroundings	Characteristics of the neighbouring area	Surrounding buildings visibility	Reversed quantity	
		Surrounding buildings facade maintenance	Quality	
		Surrounding buildings facade greenness	Quality	
		Connection to the site	Quality	
Access	Measuring of accessibility to the site	Space entries	Combined	
		Fences	Combined	
		Walking paths	Combined	
		Bike lanes	Combined	
		Car parking spaces	Quantity	
		Guiding signage	Quantity	
		Disability adaptations	Combined	
Facilities	Presence and quality of features	Slope	Reversed quantity	
		Playgrounds	Combined	
		Grass pitches	Combined	

	that allow for the realization of specific activities.	Courts	Combined	
		Dog playing grounds	Combined	
		Skateboard/BMX ramps	Combined	
		Open space for multichoice usage	Combined	
		Water-related facilities	Combined	
		Outdoor gym	Combined	
Amenities	Presence and quality of features that make the UGS more comfortable, convenient, or enjoyable.	Seating and benches	Combined	
		Litter disposal	Combined	
		Information signage	Combined	
		Picnic tables	Combined	
		Drinking fountains	Combined	
		Public toilets	Combined	
		Shelter	Quantity	
		Shade	Quantity	
		Dog excrement bins	Combined	
		Specific sports amenities	Combined	
		Barbeques	Combined	
		Cafe/Kiosk	Combined	
Aesthetics and Attractions	Measures of beauty and attractiveness.	Bike parking	Combined	
		Vegetable garden	Combined	
		Aromatics garden	Combined	
		Views	Combined	
		Primary surface	Quality	
		Material of primary surface	Quality	
		Seasonal and high maintenance vegetation	Quality	
		Year-round vegetation	Quality	
		Water foundation	Combined	
		Public art	Combined	
		Historic structures or buildings	Combined	
Incivilities	Elements or characteristics that make the UGS less enjoyable.	Public attractions	Combined	
		General litter	Reversed quantity	
		Alcohol use	Reversed quantity	
		Other drugs	Reversed quantity	
		Sex work	Reversed quantity	
		Vandalism	Reversed quantity	
		Noise	Reversed quantity	
		Smells	Reversed quantity	

Safety	Elements or characteristics that make UGS feel safe.	Lighting	Combined	
		Visibility from ground level	Quality	
		Visibility from surrounding buildings	Quality	
		Safety adaptations from cars	Quantity	
		Safety adaptations from bikes	Quantity	
		CCTV	Quantity	
Potential Usage	Measures of suitability for different activities	Informal games	Potential use	
		Walking or running	Potential use	
		Children's play	Potential use	
		Conservation of biodiversity	Potential use	
		Enjoy landscape	Potential use	
		Dog walking	Potential use	
		Social activities	Potential use	
		Relaxing	Potential use	
		Cycling	Potential use	
		Water sports	Potential use	
		Fishing	Potential use	

Appendix C: Information letter - Maltese version

Għażiż Sinjur/Sinjura

Jisimni Darren Caruana, jien student fl-Universita' ta' Malta u bħalissa qiegħed naqra għal master's degree fil-ġeografija. Bħalissa qiegħed nagħmel studju ta' riċerka għat-teżi tiegħi bit-titlu "L-Esperjenzi ta' Residenti Anzjani Maltin fl-Aċċess U fl-Użu ta' Spazji Ħodor Urbani Lokali." Dan qed jiġi sorveljat mill-Prof. Maria Attard. Din l-ittra hija stedina sabiex tipparteċipa f' dan l-istudju. Hawn taħt issib informazzjoni dwar l-istudju u dwar xiex ikun jikkonsisti l-involviment tiegħek, jekk tiddeċiedi li tiegħu sehem.

Dan l-istudju għandu l-għan li jesplora l-perċezzjonijiet u l-esperjenzi ta' residenti anzjani Maltin biex jaċċessaw, jutilizzaw u jibbenefikaw minn spazji ħodor urbani fil-lokalitajiet tagħhom. Il-partecipazzjoni tiegħek f' dan l-istudju tgħin sabiex wieħed jifhem aħjar l-opinjonijiet ta' residenti anzjani dwar l-ispazji ħodor urbani fil-lokalitajiet tagħhom, jiġifieri l-adegwatezza ta' dawn l-ispazji għall-bżonnijiet u x-xewqat tal-komunita' anzjana, kif ukoll dwar benefiċċji, aċċessibilita', u sfidi potenzjali li jiffaċċjaw ir-residenti anzjani biex jaċċessaw dawn l-ispazji. Kull informazzjoni miġbura minn din ir-riċerka se tintuża biss għall-finijiet ta' dan l-istudju. Il-partecipanti għal dan l-istudju se jkunu residenti anzjani (minn 65 sena 'l fuq) tal-lokalitajiet magħżula (H' Attard, Hal Qormi, u l-Marsa).

Jekk tagħzel li tipparteċipa, titalab tipparteċipa f'intervista semistrutturata. Din għandha ssejtni f'hin u f'post li jippreferi l-partecipant. L-intervista hija stmata li ddum bejn 30 u 60 minuta. L-intervista tiġi rrekordjata u tinħoloq traskrizzjoni sabiex tiġi analizzata mir-riċerkatur f'data aktar tard. Il-partecipanti se jibqgħu anonimi matul l-istudju kollu, u jkunu identifikati biss permezz ta' kodifikazzjoni. Kull informazzjoni li potenzjalment tidentifika se tinbidel jew titneħħa sabiex tinżamm il-kunfidenzjalita'.

Il-partecipazzjoni f' dan l-istudju hija għal kollox volontarja; fi kliem ieħor, inti liberu li taċċetta jew tirrifjuta li tipparteċipa, mingħajr ma jkollok bżonn tagħti raġuni. Inti liberu wkoll li tirtira mill-istudju fi kwalunkwe ħin, mingħajr il-ħtieġa li tipprovdi l-ebda spjegazzjoni u mingħajr l-ebda riperkussjonijiet negattivi għalik. Jekk tagħzel li tirtira, kwalunkwe data miġbura mill-intervista tiegħek titħassar sakemm dan ikun teknikament possibbli (pereżempju, qabel ma tiġi anonimizzata jew ippubblikata), sakemm it-tħassir tad-data ma jirrendix impossibbli jew ifixkel serjament il-kisba tal-oġettivi tar-riċerka, f' liema każ għandha tinżamm f' forma anonimizzata. Kull data li tinkiseb mill-intervista se tiġi miżmuma sakemm tiġi ppubblikata l-istudju. Ninformak li s-superviżur u l-eżaminaturi jkollhom aċċess għal din id-data.

Jekk tagħzel li tipparteċipa, infakkar li m'hemmx benefiċċji diretti għalik. Madankollu, il-partecipazzjoni f' din ir-riċerka toffri okkażjoni unika biex tikkomunika l-opinjonijiet tiegħek u tikkontribwixxi għal fehim akbar tal-ħtiġijiet u l-preferenzi tal-anzjani fi spazji ħodor urbani. Is-sejbiet għandhom il-potenzjal li jikkontribwixxu għall-fehim tal-ħtiġijiet u

x-xewqat tal-komunita' anzjana fil-ħolqien ta' strategiji ta' ppjanar urban u l-promozzjoni ta' ambjenti inkluzivi u favur l-eta'.

Jekk jogħġbok innota wkoll li, bħala parteċipant, għandek id-dritt skont ir-Regolamenti Ġenerali dwar il-Protezzjoni tad-Data (GDPR) u l-leġiżlazzjoni nazzjonali, li taċċessa, tirrettifika u fejn applikabbli titlob li titħassar id-data li tikkonċernak. Ir-registrazzjoni u t-traskrizzjoni għandhom jitneħħew wara li jitlesta l-istudju.

Grazzi tal-ħin u l-konsiderazzjoni tiegħek. Jekk għandek xi mistoqsijiet jew tħassib, jekk jogħġbok toqgħodx lura milli tikkuntattjani permezz ta' imejl fuq darren.caruana.15@um.edu.mt. Tista' wkoll tikkuntattja lis-supervizur tiegħi fuq it-telefown: +356 2340 2147 jew permezz tal-imejl: maria.attard@um.edu.mt

Tislijiet

Darren Caruana,

Prof. Maria Attard

darren.caruana.15@um.edu.mt
maria.attard@um.edu.mt

+356 9951 7326

+356 2340 2147

Appendix D: Information letter - English version

Dear Sir/Madam

My name is Darren Caruana, I am a student at the University of Malta, presently reading for a master's degree in geography. I am presently conducting a research study for my dissertation titled "The Experiences of Maltese Elderly Residents in Accessing and Using Local Urban Green Spaces." This is being supervised by Prof. Maria Attard. This letter is an invitation to participate in this study. Below you will find information about the study and about what your involvement would entail, should you decide to take part.

This study aims to explore the perceptions and experiences of Maltese elderly residents in accessing, utilising and benefitting from urban green spaces within their localities. Your participation in this study would help contribute to a better understanding of the opinions of elderly residents on urban green spaces in their localities, namely the adequacy of these spaces for the needs and wants of the elderly community, as well as matters such as perceived benefits, accessibility, and potential barriers faced by elderly residents in accessing these spaces. Any data collected from this research will be used solely for purposes of this study. Participants for this study will be elderly residents (aged 65 and above) of the selected localities (Attard, Qormi, and Marsa).

Should you choose to participate, you will be asked to participate in a semi-structured interview. This shall occur at a time and place agreeable to the participant. The interview is estimated to last between 30 to 60 minutes. The interview shall be recorded and a transcript will be created in order to be analysed by the researcher at a later date. Participants will remain anonymous throughout the study, identified only via coding. Any potentially identifying information will be altered or removed to maintain confidentiality.

Participation in this study is entirely voluntary; in other words, you are free to accept or refuse to participate, without needing to provide a reason. You are also free to withdraw from the study at any time, without needing to provide any explanation and without any negative repercussions for you. Should you choose to withdraw, any data collected from your interview will be erased as long as this is technically possible (for example, before it is anonymised or published), unless erasure of data would render impossible or seriously impair achievement of the research objectives, in which case it shall be retained in an anonymised form. Any data obtained from the interview will be stored up until the publication of the study. Kindly note that the supervisors and examiners of the research may have access to the data.

If you choose to participate, please note that there are no direct benefits to you. Nonetheless, participation in this research offers a unique opportunity to communicate your opinions and contributes to a greater understanding of the needs and preferences of the elderly in urban green spaces. The findings have the potential to contribute to the understanding of the needs and desires of the elderly community in creating urban planning strategies and promoting inclusive and age-friendly environments.

Please note also that, as a participant, you have the right under the General Data Protection Regulation (GDPR) and national legislation to access, rectify and where applicable ask for the data concerning you to be erased. The recording and transcript shall be removed following the completion of the study.

Thank you for your time and consideration. Should you have any questions or concerns, please do not hesitate to contact me by e-mail: darren.caruana.15@um.edu.mt. You can also contact my supervisor over the phone: +356 2340 2147 or via email: maria.attard@um.edu.mt

Best regards,

Darren Caruana
Attard

darren.caruana.15@um.edu.mt
maria.attard@um.edu.mt

Prof. Maria

+356 2340 2147

Appendix E: Letter of consent - Maltese version

Formola tal-kunsens tal-partecipant/a

‘L-Esperjenzi ta’ Residenti Anzjani Maltin fl-Aċċess u L-Użu tal-Ispazji Ħodor Urbani Lokali.’

Jiena, hawn taħt iffirmit/a, nagħti l-kunsens tiegħi li nieħu sehem fl-istudju ta’ Darren Caruana. Din il-formola tal-kunsens tispjega t-termini tas-sehem tiegħi f’din ir-riċerka.

1. Ingħatajt l-informazzjoni bil-miktub u/jew bil-fomm dwar l-iskop tar-riċerka; kelli l-opportunità nagħmel il-mistoqsijiet, u kull mistoqsija ngħatajt twegiba għaliha b’mod sħiħ u sodisfaċenti.
2. Nifhem ukoll li jiena liberu/a li naċċetta li nieħu sehem, jew li nirrifjuta, jew li nwaqqaf il-partecipazzjoni tiegħi meta nixtieq mingħajr ma nagħti spjegazzjoni jew mingħajr ma niġi penalizzat/a. Jekk nagħzel li nipparteċipa, jaf niddeċiedi li ma nwegibx kull mistoqsija li ssirli. F’każ li nagħzel li ma nkomplix nieħu sehem fl-istudju, l-informazzjoni li tkun laqgħet ingabret mingħandi tithassar dment li jkun teknikament possibbli (ngħidu aħna, qabel ma tiġi anonimizzata jew ippubblikata), u sakemm l-għanijiet tar-riċerka jkunu jistgħu jintlaħqu u ma jintlaqtux serjament. F’dak il-każ, l-informazzjoni tiegħi tintuża u tinzamm anonima.
3. Nifhem li ġejt mistieden/mistiedna nipparteċipa f’ intervista semi-strutturata u l-persuna li qed tagħmel ir-riċerka se tmexxi intervista sabiex tinvestiga l-perċezzjoni u l-użu tal-ispazji ħodor urbani mir-residenti anzjani tal-lokalita’. Jiena konxju/a li l-intervista se ddum bejn wieħed u ieħor 30-60 minuta sabiex titlesta. Nifhem li l-intervista se ssir f’post u f’hin li huma komdi għaliha.
4. Nifhem li l-partecipazzjoni tiegħi ma ma fiha l-ebda riskju magħruf jew mistenni.
5. Nifhem li bil-partecipazzjoni tiegħi f’dan l-istudju, m’hemm l-ebda benefiċċju dirett għaliha. Nifhem ukoll li din ir-riċerka jaf tkun ta’ benefiċċju għall-oħrajn għax tipprovdi għarfien dwar il-bżonnijiet u x-xewqat tar-residenti anzjani fir-rigward tal-ispazji urbani ħodor.
6. Nifhem li, skont ir-Regolament Ġenerali dwar il-Protezzjoni tad-Data (GDPR) u l-leġislazzjoni nazzjonali, għandi dritt naċċessa, nikkoreġi u, fejn hu applikabbli, nitlob li l-informazzjoni li tikkonċernani tithassar.
7. Nifhem li l-informazzjoni kollha miġbura se tithassar meta jintemm l-istudju u wara li joħroġu r-riżultati.
8. Ingħatajt kopja tal-ittra ta’ tagħrif biex inżommha u nifhem li se ningħata wkoll kopja ta’ din il-formola tal-kunsens.

9. Konxju/a li, jekk nimmarka l-ewwel kaxxa t'hawn taht, inkun qed nagħti l-kunsens tiegħi biex l-intervista tiġi rrekordjata bl-awdjo u maqlub/a f'kitba fl-istess waqt (traskrizzjoni).

IMMARKA BISS DAK LI JAPPLIKA

- ☐ Naqbel li l-intervista tiġi rrekordjata bl-awdjo.
☐ Ma naqbilx li l-intervista tiġi rrekordjata bl-awdjo.

10. Konxju/a li siltiet mill-intervista tiegħi jistgħu jiġu riprodotti b'mod anonimu jew bl-użu ta' psewdonimu [isem ivvintat jew kodiċi - eż. parteċipant A].

Qrajt u fhimt l-istqarrijiet t'hawn fuq, u naqbel li nipparteċipa f'dan l-istudju.

Isem il-parteċipant/a: _____

Firma: _____

Data: _____

Darren Caruana
Attard

Prof. Maria

darren.caruana.15@um.edu.mt
maria.attard@um.edu.mt

+356 2340 2147

Appendix F: Letter of consent - English version

Participant's consent form:

'The Experiences of Maltese Elderly Residents in Accessing and Using Local Urban Green Spaces.'

I, the undersigned, give my consent to take part in the study conducted by Darren Caruana. This consent form specifies the terms of my participation in this research study.

1. I have been given written and/or verbal information about the purpose of the study; I have had the opportunity to ask questions and any questions that I had were answered fully and to my satisfaction.
2. I also understand that I am free to accept to participate, or to refuse or stop participation at any time without giving any reason and without any penalty. Should I choose to participate, I may choose to decline to answer any questions asked. In the event that I choose to withdraw from the study, any data collected from me will be erased as long as this is technically possible (for example, before it is anonymised or published), unless erasure of data would render impossible or seriously impair achievement of the research objectives, in which case it shall be retained in an anonymised form.
3. I understand that I have been invited to participate in a semi-structured interview in which the researcher will conduct an interview to investigate the perceptions and usage of urban green spaces by elderly residents. I am aware that the interview will take approximately 30-60 minutes to complete. I understand that the interview is to be conducted in a place and at a time that is convenient for me.
4. I understand that my participation does not entail any known or anticipated risks.
5. I understand that there are no direct benefits to me from participating in this study. I also understand that this research may benefit others by providing insights into the needs and wants of elderly residents with regards to urban green spaces.
6. I understand that, under the General Data Protection Regulation (GDPR) and national legislation, I have the right to access, rectify, and where applicable, ask for the data concerning me to be erased.
7. I understand that all data collected will be erased on completion of the study and following publication of results
8. I have been provided with a copy of the information letter and understand that I will also be given a copy of this consent form.
9. I am aware that, by marking the first-tick box below, I am giving my consent for interview to be audio recorded and converted to text as it has been recorded (transcribed).

MARK ONLY IF AND AS APPLICABLE

- ☐ I agree to this interview being audio recorded.
- ☐ I do not agree to this interview being audio recorded.

10. I am aware that extracts from my interview may be reproduced in these outputs, either in anonymous form, or using a pseudonym [a made-up name or code – e.g. respondent A].

I have read and understood the above statements and agree to participate in this study.

Name of participant: _____

Signature: _____

Date: _____

Darren Caruana
darren.caruana.15@um.edu.mt
maria.attard@um.edu.mt

Prof. Maria Attard

+356 2340 2147

Appendix G: Semi-structured interview guide - Maltese version

Mistoqsijiet kontestwalizzanti

1. Eta': _____

2. Sess: _____

3. Snin jgħixu fl-indirizz attwali: _____

4. L-ogħla livell ta' edukazzjoni

- ☐ A. Edukazzjoni sekondarja
- ☐ B. Edukazzjoni post-sekondarja
- ☐ Ċ. Edukazzjoni terzjarja

5. Impjieg/ex-impjieg: _____

6. Arrangamenti ta' għajxien:

- ☐ A. Ngħix waħdi
- ☐ B. Ngħix ma' membri tal-familja/oħrajn
- ☐ Ċ. Ngħix f' dar residenzjali

7. Valutazzjoni tal-Mobilita':

- ☐ A. Faċilment nista' nimxi distanza qasira (300 m) b'heffa f'inqas minn 5 minuti.
- ☐ B. Kapaċi nimxi ftit 'il bogħod (300 m) imma jiehu ħin itwal.
- ☐ Ċ. Kapaċi nimxi b' diffikulta' jew għajnuna
- ☐ D. Jien għandi mobilita' limitata ħafna u għandi bżonn ta' *mobility aid*.
- ☐ E. M'iniex kapaċi nimxi.

Gwida għall-intervista semi-strutturata

Qabel l-intervista, l-intervistatur se jerga' jiddefinixxi u jispjega t-terminu spazju aħdar urban. L-intervistatur jista' jistaqsi jekk l-intervistat jixtieq jirreferi għal lista ta' UGS fil-lokalità tiegħu qabel ma tibda l-intervista.

Mistoqsijiet segwiti potenzjali huma mistoqsijiet li l-intervistatur għandu jsaqsi jekk jemmen li permezz tagħom jista' jikseb aktar għarfien relatat mal-mistoqsija oriġinali.

Tema	Mistoqsija	Mistoqsijiet segwiti potenzjali
II- parteċipant juża spazji ħodor urbani?	1. Inti żżur spazji ħodor urbani fil-lokalità tiegħek? Għaliex / Għaliex le? JEKK IVA (Inkluż. "Kultant"): ipproċedi għal 'inżur spażji ħodor urbani' għall-mistoqsijiet 2-5. JEKK LE (Inkluż. "Rari"): ipproċedi għal 'ma nżurx spażji ħodor urbani' għall-mistoqsijiet 2-5. Wara għaż-żewġ każijiet ipproċedi għal Q.6	/
		I. X'izommok milli tuża l-ispażji ħodor urbani fil-lokalità tiegħek? II. Iżżur spazji ħodor urbani li kieku (IS-SITWAZZJONI) ma kinitx kwistjoni? Għaliex / Għaliex le? III. Kif nistgħu ninkoraġġixxu żjarat aktar frekwenti fi spazji ħodor urbani fiż-żona lokali tiegħek?

II-parteciċant wieġeb li iżur spazji ħodor urbani

Tema	Mistoqsija	Mistoqsijiet segwiti potenzjali
Użu u perċezzjoni	2. X'taħseb (JEW għidli aktar dwar kif tħossok) dwar l-ispazji ħodor urbani fil-lokalità tiegħek?	i. Kemm int sodisfatt bl-ispazji ħodor urbani fil-lokalità tiegħek? ii. Kif tħossok meta żżur/tgħaddi minn spazju aħdar urban fil-lokalità tiegħek? iii. Taħseb li l-ispazji ħodor urbani tal-lokalità tiegħek huma ideali għalik u għall-anzjani oħra? Għaliex/Għaliex le? iv. L-ispazji ħodor urbani jipprovdu l-faċilitajiet u/jew il-karatteristiċi kollha li int u anzjani oħra teħtieġu/tixtiequ? v. X'inhuma xi affarijiet oħra pożittivi/negattivi dwar l-ispazji ħodor?
	3. Tista' tiddekrivi esperjenza tipika gewwa spazju aħdar urban fil-lokalità tiegħek?	i. X'tagħmel meta żżur spazju aħdar urban fil-lokalità tiegħek? ii. Hemm xi attivitajiet li tħoss li ma tistax tagħmel minhabba d-disinn/xi nuqqas ta' faċilitajiet fl-ispazji ħodor urbani tal-lokalità tiegħek? iii. Taħseb li l-ispazji ħodor urbani fil-lokalità tiegħek huma sikuri għall-anzjani f'termini ta' infrastruttura u tagħmir/għamara? iv. Jipprovdu protezzjoni biżżejjed mill-isfruttament kriminali?
	4. Liema spazju aħdar urban fil-lokalità tiegħek huwa l-favorit tiegħek? Għaliex dan l-ispazju aħdar urban huwa l-favorit tiegħek u x'jiddistingwih mill-oħrajn?	i. Kemm-il darba żżur dan l-ispazju? ii. Hemm xi ħaġa li ma tħobbx dwar l-ispazju aħdar urban favorit tiegħek?
	5. Kif jistgħu jitjiebu għalik l-ispazji ħodor urbani fil-lokalità tiegħek?	/

Il-parteciċipant wieġeb li ma jżurx spazji ħodor urbani

Tema	Mistoqsija	Mistoqsijiet segwiti potenzjali
Użu u perċezzjoni	2.X'taħseb (JEW għidli aktar dwar kif tħossok) dwar l-ispazji ħodor urbani fil-lokalità tiegħek?	i. Kemm inti sodisfatti bl-ispazji ħodor urbani? ii. Kif tħossok meta żżur/tgħaddi hdejn spazju aħdar urban fil-lokalità tiegħek? iii. Taħseb li l-ispazji urbani ħodor tal-lokalità tiegħek huma ideali għalik u għall-anzjani oħra? Għaliex/Għaliex le? iv. L-ispazji ħodor urbani jipprovdu l-faċilitajiet u/jew il-karatteristiċi kollha li int u anzjani oħra teħtieġu/tixtiequ? v. X'inhuma xi affarijiet oħra pożittivi/negattivi dwar l-ispazji ħodor?
	3. Minħabba li m'intix viżitatur frekwenti, x'inhu fl-opinjoni tiegħek ambjent xieraq li forsi jhegġigek iżżur aktar?	i. X'attivitajiet għandek tkun kapaċi tagħmel għewwa spazju aħdar urban? ii. Hemm xi attivitajiet li tħoss li ma tistax tagħmel minħabba d-disinn/xi nuqqas ta' faċilitajiet fl-ispazji ħodor tal-lokalità tiegħek? iii. Taħseb li l-ispazji ħodor urbani fil-lokalità tiegħek huma sikuri għall-anzjani f'termini ta' infrastruttura u tagħmir/għamara? iv. Jipprovdu protezzjoni biżżejjed mill-isfruttament kriminali?
	4.Liema spazju aħdar urban fil-lokalità tiegħek huwa l-inqas favorit tiegħek? U x'jagħmlu l-inqas favorit tiegħek?	i. Hemm xi ħaġa li togħgbok dwar l-inqas spazju aħdar urban favorit tiegħek?
	5.Kif jistgħu jitjiebu għalik l-ispazji ħodor urbani fil-lokalità tiegħek?	/

Tkompli kemm għall-minn jużar u kemm għal min ma jużax l-ispazji ħodor urbani

Tema	Mistoqsija	Mistoqsijiet segwiti potenzjali
Benefiċċji tal-ispazji ħodor urbani	6. X'inhu l-impatt li jhallu fuq is-saħħa fizika tiegħek ż-żjarat lejn is-spazji ħodor urbani tal-lokalità tiegħek?	/
	7. X'inhu l-impatt li jhallu fuq is-saħħa mentali tiegħek ż-żjarat fi spazji ħodor urbani tal-lokalità tiegħek?	/
	8. X'rwol għandhom l-ispazji ħodor urbani tal-lokalità tiegħek fil-ħajja soċjali tiegħek u fil-konnessjoni tiegħek mal-komunità?	/
	9. Hemm xi benefiċċji oħrjan li tiegħu meta żżur spazji ħodor urbani fil-lokalità tiegħek?	/
	10. L-ammont (jew in-nuqqas ta') ta' spazju aħdar urban ta' kwalità għolja li hemm fil-lokalità, kif jaffettwak personalment?	/
	11. Kemm hu importanti li l-ispazji ħodor urbani jkunu disponibbli fil-lokalità tiegħek aktar milli f'lokalitajiet oħra biss?	/
Aċċess għall-UGS	12. X'inhu l-esperjenza tiegħek fl-aċċess għall-ispazji ħodor urbani fil-lokalità tiegħek?	/
	13. Tista' tiddekrivi xi ostakli jew diffikultajiet li tista' tiffaċċja meta tipprova taċċessa spazju aħdar urban fil-lokalità tiegħek?	/
	14. In-nies għewwa jew madwar l-ispazji ħodor urbani jhallu impatt fuq l-aċċess tiegħek għall-ispazju aħdar?	/
	15. Tuża xi spazji ħodor urbani barra mil-lokalità tiegħek?	Jekk iva, tippreferi dan milli spazji ħodor urbani lokali? Għaliex?

Appendix H: Semi-structured interview guide - English version

Contextualising questions prior to main interview

1. Age: _____
2. Sex: _____
3. Years living at current address: _____
4. Highest level of education
 - ☐ A. Secondary education
 - ☐ B. Post-secondary education
 - ☐ C. Tertiary education
5. Employment / Former employment: _____
6. Living Arrangements:
 - ☐ A. I live alone
 - ☐ B. I live with family members/others
 - ☐ C. I live in a residential home
7. Mobility Assessment:
 - ☐ A. I can easily walk a short distance (300 m) with ease in under 5 minutes.
 - ☐ B. I can walk a short distance (300 m) but it takes a longer time.
 - ☐ C. I can walk with difficulty or assistance
 - ☐ D. I have very limited mobility and need a mobility aid
 - ☐ E. I am unable to walk

Semi-structured interview guide

Prior to the interview, the interviewer will once more define and explain the term **Urban Green Space (UGS)**. The interviewer may ask if the interviewee would like to refer to a list of UGS in their locality prior to the commencement of the interview.

Potential follow-up questions are intended to derive more information, in the case that the interviewer feels that more can be discussed with regard to the main question.

Theme	Question	Potential follow-up question
Is this an UGS User or a Non UGS user?	16. Do you visit Urban Green Spaces in your locality? Why / Why not? IF YES (Inc. "Sometimes"): proceed to 'Urban Green Space User' for questions 2-5.	/
	IF NO (Inc. "Rarely"): proceed to 'Urban Green Space User' for questions 2-5. After for both cases proceed to Q.6.	I. What stops you from using UGS in your locality? II. Would you visit green spaces if (SITUATION) wasn't an issue? Why / Why not? III. How might we encourage more frequent visits to urban green spaces in your local area?

Urban green space user

Theme	Question	Potential follow-up question
Usage and perception	17. What do you think (OR tell me more about how you feel) about the green spaces in your locality?	i. How satisfied are you with the UGS in your locality? ii. How do you feel when you visit/pass by an urban green space in your locality? iii. Do you think that they are ideal green spaces for you and other elderly people? Why/Why not? iv. Do they provide all the facilities and/or features that you and other elderly people need/want? v. What are some other positive/negative things about the urban green spaces?
	18. Can you describe a typical experience inside an urban green space in your locality?	v. What do you do when you visit an urban green space in your locality? vi. Are there any activities which you feel you cannot do because of the design/ any lack of facilities in the urban green spaces of your locality? vii. Do you think the urban green spaces in your locality are safe for elderly people in terms of infrastructure and equipment/furniture? viii. Does they provide sufficient protection from criminal exploitation?
	19. Which green space in your locality is your favourite? Why is this urban green space your favourite and what distinguishes it from the others?	iii. How often do you visit this space? iv. Is there anything that you do not like about your favourite urban green space?
	20. How can green spaces in your locality be improved for you?	/

Urban green space non-user

Theme	Question	Potential follow-up question
Usage and perception	2.What do you think (OR tell me more about how you feel) about the green spaces in your locality?	i. How satisfied are you with the urban green spaces in your locality? ii. How do you feel when you visit/pass by an urban green space in your locality? iii. Do you think that they are ideal urban green spaces for you and other elderly people? Why/Why not? iv. Do the urban green spaces provide all the facilities and/or features that you and other elderly people need/want? v. What are some other positive/negative things about the green spaces?
	3. Given that you are not a frequent visitor, what in your opinion is an appropriate environment that would perhaps encourage you to visit more?	v. What activities should you be able to do inside an urban green space? vi. Are there any activities which you feel you cannot do because of the design/ any lack of facilities in the green spaces of your locality? vii. Do you think the green spaces in your locality are safe for elderly people in terms of infrastructure and equipment/furniture? viii. Does the urban green space provide sufficient protection from criminal exploitation?
	4.Which green space in your locality is your least favourite? And what makes it your least favourite?	ii. Is there anything that you like about your least favourite green space?
	5. How can green spaces in your locality be improved for you?	/

Continued for both users and non-users of urban green space

Theme	Question	Potential follow-up question
Benefits of UGS	21. What is the impact of visiting local urban green spaces on your physical health?	/
	22. What is the impact of visiting local urban green spaces on your mental health.	/
	23. What role do urban green spaces play in your social life and in connecting you to the community?	/
	24. Are there any other benefits which you get from visiting local urban green spaces.	/
	25. How does the amount (or lack of) of high quality green space that there is in the locality, impact you personally?	/
	26. How important is it that green spaces are available in your hometown rather than just in other localities?	/
Accessing UGS	27. What is your experience in accessing green spaces in your locality?	/
	28. Can you describe any barriers or difficulties you might face when trying to access green space in your locality?	/
	29. Do the people in or around the green space impact your access to green space?	/
	30. Do you use any UGS outside of your locality?	In the affirmative, do you prefer this over local UGS? In the affirmative, why?