USING WALKABILITY TO SUPPORT HEALTHY AGEING

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Degree of Master of Science in Urban Management

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February 2016
We need to ensure these extra years are healthy, meaningful and dignified. Achieving this will not just be good for older people, it will be good for society as a whole.

(Margaret Chan, Director General WHO, 2015b)
DECLARATION

This thesis contains no material which has been accepted for the award of any other degree or diploma in any institution, and to the best of my knowledge and belief, the research contains no material previously published or written by another person, except where due reference has been made in the text of the thesis.

Adele Catherine Vosper

Berlin, 1 February 2016
SUMMARY

‘Healthy Ageing’ is the World Health Organization’s official policy response to the phenomenon of population ageing, which is currently underway in many countries. An important element of the healthy ageing approach is its recognition of the important role environmental factors continue to play in determining the functional ability of older individuals. Indeed, the neighbourhood environment becomes increasingly significant as people age and their sphere of mobility begins to shrink due to changes in roles, physical capacity, and financial resources.

Walkability is currently a popular area of research in the public health field, and explores the relationship between the physical neighbourhood environment and walking behaviour. However, the discourse to date has focussed on the physical activity levels of adults in either North America or Australia. Only a limited number of studies have been conducted in Europe, and/or addressed the specific needs of older people.

It has been suggested that the walkability of a neighbourhood may also promote or impede social participation of its residents. Given that social participation, like walking, can have positive effects on health, this study set out to explore the extent to which walkability can be considered a neighbourhood level determinant of social participation for older people.

The study identified three key themes linking the concepts of walkability and social participation, namely: safety, destinations (availability, accessibility and distance) and atmosphere. These interlinkages provided the basis for concluding that walkability could be considered a neighbourhood level determinant of social participation for older people. However, given that the theme of accessibility was identified not only in terms of walking, but also in terms other transport modes, it may be more appropriate to examine the relationship between social participation and mobility more broadly.
ACKNOWLEDGEMENTS

Above all, I would like to thank all the people who gave their time to participate in this study. In addition, I would like to acknowledge the assistance of Frau Helenore Bock (Martin-Luther Kirche), Herr Klaus Gierscher (Eigeninitiativ-im-Alter), Frau Fenster (Moabiter Ratschlag e.V), and Frau Judith Göde (St Johannis Kirche) - without them I would have struggled to find willing participants to complete the survey (including during the test phase). I would also like to thank Heike Schmidt and Alexandra Baronsky for proofreading my German in the survey and test-survey.

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Thanks to my mum – for everything really, but especially for doing the final proofread of both of my masters’ theses.

Finally I would like to thank Shane for helping me keep my sanity, and supplying me with homemade granola and gluten-free baked goods during the past year and a half.
# TABLE OF CONTENTS

1 INTRODUCTION...................................................................................................................... 1

2 AGEING AND HEALTH.......................................................................................................... 5
   2.1 Demographic Change.......................................................... 5
      2.1.1 Demographic Change in Germany ......................... 6
   2.2 Ageing ................................................................. 11
   2.3 Physical-Social Environments .................................. 12
   2.4 Healthy Ageing ...................................................... 14

3 SOCIAL PARTICIPATION .................................................................................................. 17
   3.1 Definition .............................................................. 17
   3.2 Social Participation & the Bigger Picture of Social Capital ...... 19
   3.3 Social Participation & the Health of Older People .......... 21

4 WALKABILITY ................................................................................................................ 25
   4.1 Definitions and Measurements .................................. 25
   4.2 Walkability for Older People .................................... 27
   4.3 Walkability & Health: More Than Just Physical Activity? .... 33

5 SOCIAL PARTICIPATION AND WALKABILITY .................................................................. 35
   5.1 Rationale ................................................................. 35
   5.2 Environmental Factors vs. Individual Factors .............. 38
   5.3 Opportunities for Social Interaction ......................... 39
      5.3.1 Destinations ...................................................... 40
   5.4 Perceptions ............................................................ 41
   5.5 Limitations ............................................................. 42
   5.6 Conceptual Model .................................................... 44

6 METHODOLOGY .............................................................................................................. 47
   6.1 Why Qualitative Methods? ........................................ 47
   6.2 Description of Case Study .......................................... 48
      6.2.1 Level of Analysis ............................................. 49
      6.2.2 Study Participants ........................................... 50
   6.3 Data Collection ........................................................ 52
      6.3.1 Survey .............................................................. 53
      6.3.2 Walking-By Interview ......................................... 55
      6.3.3 Social Area Analysis/Sozialraumanalyse ............... 57
      6.3.4 Focus Group Discussion and Field Notes ............... 59
### List of Tables

**Table 1:** Number of people in Berlin aged 65 years and over ........................................10

**Table 2:** Percentage of population in Berlin aged 65 years and over ..............................10

**Table 3:** Classification of subjects ......................................................................................23

**Table 4:** Themes, subthemes and environmental factors ....................................................30

**Table 5:** Explanation of verbal counting terms ......................................................................62

**Table 6:** Study participants ..................................................................................................66

**Table 7:** Marital status ..........................................................................................................69

**Table 8:** Income, education and self-reported health status (arranged in order of income level) ........................................................................................................................................................................70

**Table 9:** Population characteristics of Moabit by LOR (2012) .........................................75

**Table 10:** Gender split in population aged 65 years and over (2012) ..............................76

**Table 11:** Selected social urban development indicators (2012) .......................................77

**Table 12:** Frequency of days where participant does not leave their apartment ...............85

**Table 13:** Frequency of walking episodes per week ..........................................................85

**Table 14:** Relationship between walking episodes, health status and age .................86

**Table 15:** Reason for not leaving the apartment .................................................................87

**Table 16:** Factors affecting decision to walk .......................................................................88

**Table 17:** Importance of distance ........................................................................................89

**Table 18:** Destinations accessed by foot (or bike) ............................................................90

**Table 19:** Frequency of bumping into acquaintances .........................................................93

**Table 20:** Frequency of stopping for a chat .........................................................................93

**Table 21:** Relationship between informal social participation, walking frequency, and number of acquaintances in the neighbourhood ........................................................95

**Table 22:** Meeting places .....................................................................................................96

**Table 23:** Reason for choosing meeting place .....................................................................97
<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Participation in organised activities</td>
<td>97</td>
</tr>
<tr>
<td>25</td>
<td>Importance of factors in determining participation in activities</td>
<td>98</td>
</tr>
<tr>
<td>26</td>
<td>Number of years lived in Moabit</td>
<td>102</td>
</tr>
<tr>
<td>27</td>
<td>Reasons for feeling comfortable in neighbourhood</td>
<td>103</td>
</tr>
<tr>
<td>28</td>
<td>Reasons pertaining to suitability of neighbourhood for seniors</td>
<td>104</td>
</tr>
<tr>
<td>29</td>
<td>General comments about neighbourhood</td>
<td>105</td>
</tr>
<tr>
<td>30</td>
<td>Key themes regarding perception of neighbourhood</td>
<td>110</td>
</tr>
<tr>
<td>31</td>
<td>Key themes related to walkability and social participation</td>
<td>110</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

FIGURE 1: AGE STRUCTURE OF THE POPULATION IN GERMANY - 2013 AND 2060 .......... 7

FIGURE 2: POPULATION AGE GROUPS IN % .............................................................. 8

FIGURE 3: POPULATION AGED 65 AND ABOVE ................................................... 8

FIGURE 4: AGE STRUCTURE 2015 ....................................................................... 9

FIGURE 5: PROJECTED AGE STRUCTURE 2030 (VARIANT 1) .............................. 9

FIGURE 6: COMPONENTS OF HEALTHY AGEING IDENTIFIED IN THE LITERATURE .............. 15

FIGURE 7: PROPOSED TAXONOMY OF SOCIAL ACTIVITIES ................................. 18

FIGURE 8: OVERVIEW OF ENVIRONMENTAL FACTORS INFLUENCING WALKING FOR TRANSPORTATION ...................................................................... 32

FIGURE 9: AGE FRIENDLY CITY TOPIC AREAS ..................................................... 37

FIGURE 10: CONTEXTUAL INFLUENCES THAT PROMOTE MOBILITY IN OLDER ADULTS ...... 45

FIGURE 11: CONCEPTUAL MODEL: RELATIONSHIP BETWEEN WALKABILITY, SOCIAL PARTICIPATION AND HEALTH IN OLDER ADULTS ................................................. 46

FIGURE 12: RESIDENCE OF SURVEY PARTICIPANTS ........................................... 67

FIGURE 13: DIVISION OF MOABIT INTO PLANNING AREAS .................................... 72

FIGURE 14: KEY PHYSICAL FEATURES OF MOABIT .............................................. 73

FIGURE 15: WHERE THE BUSINESS PARK BACKS ONTO THE SPREE AT STROMSTRAßE .... 74

FIGURE 16: GROCERY STORE CORNER ALT-MOABIT AND CALVINSTRAßE ............ 78

FIGURE 17: PENNY SUPERMARKET, ALT-MOABIT ............................................... 78

FIGURE 18: LOR 01022204 .................................................................................. 79

FIGURE 19: CARL-VON-OSSIETZKY-PARK ......................................................... 80

FIGURE 20: CARL-VON-OSSIETZKY-PARK ......................................................... 80

FIGURE 21: INTERSECTION CORNER STROMSTRAßE AND TURMSTRAßE ............ 81

FIGURE 22: INTERSECTION CORNER ALT-MOABIT AND PAULSTRAßE ............... 81

FIGURE 23: FOOTPATH ON MALANCHTHONSTRAßE ........................................... 81

FIGURE 24: FOOTPATH BEHIND THE BUSINESS PARK, ALONG THE SPREE ............... 81
**LIST OF ABBREVIATIONS AND ACRONYMS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGD</td>
<td>Focus Group Discussion</td>
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<tr>
<td>ICF</td>
<td>International Classification of Functioning</td>
</tr>
<tr>
<td>IGF</td>
<td>Institut für Gerontologische Forschung e.V (Institute for Gerontological Research)</td>
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<tr>
<td>JVA</td>
<td>Justizvollzugsanstalt (prison)</td>
</tr>
<tr>
<td>LOR</td>
<td>Lebensweltlich orientierte Räume (planning areas)</td>
</tr>
<tr>
<td>PA</td>
<td>Physical Activity</td>
</tr>
<tr>
<td>SDH</td>
<td>Social Determinants of Health</td>
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<td>WBI</td>
<td>Walking-By-Interview</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
</tbody>
</table>
LIST OF APPENDICES

APPENDIX 1: CONCEPTUAL MODELS OF HOW SOCIAL NETWORKS IMPACT HEALTH........ 136

APPENDIX 2: STUDY SURVEY ..................................................................................... 137

APPENDIX 3: WALKING-BY-INTERVIEW GUIDE ......................................................... 143
1 Introduction

To support longer living and greater societal participation, EU environments will need to encourage more physically and mentally active lifestyles, and provide places that are safe and accessible, promoting dignity and respect.

(European Commission 2012, p. 4).

Walking. It’s being touted as the latest “exercise de jour” (Guardian 2015) - suitable for all ages and having wide-ranging health benefits (The Walking Revolution 2013). A recent Australian study attracting international media attention found that daily step count was inversely associated with all-cause mortality (Dwyer et al. 2015). However, we’re not doing enough of it. Changes in our work and living environments, as well as our leisure-time activities have effectively meant that walking has been engineered out of our everyday lives (The Walking Revolution 2013). This is concerning, not just because of the health risks associated with sedentarism, but also because of the forfeited health, environmental, economic, social equity, traffic-related and quality of life benefits associated with walking (Armstrong et al. 2015; Litman 2004). For these reasons, the concept of walkability has emerged as a way to measure how walkable neighbourhoods are, and, by implication, how likely people are to walk in them.

The adoption of the walkability measure from the field of transportation by public health researchers has been widely embraced. A scan of the literature in 2012 revealed that walkability was one of the most discussed topics in ‘non-medical’ health research (Andrews et al. 2012). However, the research to date has been somewhat narrow in scope, having primarily been carried out in North America and Australia and focussing
on physical activity (PA) levels and PA-related health outcomes among adult populations (generally people aged 18-65). With population ageing, or demographic change, emerging as a key policy issue globally (WHO 2015c), the limited focus on older people in the walkability literature (Van Cauwenberg et al. 2014) is somewhat surprising.

The proportion of the world’s population aged 60 and over is expected to nearly double over the next 35 years, from 12% in 2015 to 22% in 2050, equating to approximately 2 billion people (WHO 2015a, 2015c). While representing successes in public health policies as well as socio-economic development, it has been recognised that demographic change of this scale presents a number of challenges (see for example: WHO 2002a; WHO Regional Office for Europe 2013; EuroHealthNet n.d.). Despite attracting significant attention in public discourse, the economic issues (e.g. cost of health care and financing pension schemes) are only one aspect of the manifold challenges. From a more human-rights based perspective, the biggest challenge may be to find ways to “maximize the health and functional capacity of older people as well as their social participation and security” (WHO n.d.).

This thesis explores the potential to expand the concept of walkability, moving away from its focus on working-age adults and PA, to also including its effect on the social participation of older people. It is hypothesised that the concept of walkability could be expanded to take into account the important role neighbourhood environments play with regard to social participation through facilitating mobility and providing spaces for this to occur. As already recognised by ecological approaches to gerontology and socio-ecological approaches to public health, neighbourhood physical and social environments can play an important role in supporting the health and functionality of older people.

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1 In the same year that the WHO constitution came into force, the human right to health was established in Article 25 of the Universal Declaration of Human Rights (United Nations 1948). The right to health was subsequently reinforced in Article 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) (Office of the High Commissioner for Human Rights 1976).
Chapter 1: Introduction

The study therefore specifically examines the extent to which walkability can be considered a neighbourhood-level determinant of social participation of older people. In order to determine this, the study also:

- identifies limitations of the current definition of walkability, particularly regarding applicability to older people and a European context
- identifies elements of the physical-social environment that are facilitators and obstacles for social participation of older people and explore how these align with measures of walkability
- seeks to understand differences in how older people perceive their neighbourhood environment
- considers potential negative effects from expanding the concept of walkability

Qualitative methodology was used for this study. Data was collected through a literature review as well as empirical research comprising both researcher observations and participants’ experiences and opinions. A European city (Berlin) was chosen as the site for the empirical research in order to contribute to the small, but growing amount of evidence exploring the applicability of the walkability concept to the European context. It was expected that current definitions of walkability could not be directly applied to the context of older Europeans without some modification.

Before examining how the concept of walkability might be expanded to include its effects on the social participation of older people, it is necessary to establish a basic understanding of the underlying themes of this research. Chapter 2 therefore introduces the themes of demographic change, ageing, physical-social environments, and healthy ageing. Chapters 3 and 4 provide an overview of the literature regarding walkability and social participation, specifically focussing on the relationship between these concepts and the health of older people. Drawing on the literature, Chapter 5 explores the feasibility of linking the concepts of walkability and social participation, and presents the conceptual framework of the study. In Chapter 6 the methodology of the study is detailed, and in Chapters 7 and 8 the results of the study are presented. Chapter 9 links the key themes identified in the results back to the literature, and the final chapter presents the conclusions of the study, including limitations and suggestions for future research.
Using Walkability to Support Healthy Ageing
2 Ageing and Health

It is futile to speak about demographic change without an understanding of ageing, and why neither the process nor the outcomes are homogenous. It is only with this understanding that the changing needs of populations as they age can be identified and appropriate measures to support health and functionality in old age can be developed. With respect to this study, an understanding of ageing reveals the importance of the physical-social environment in determining health outcomes, and thus provides the rationale for considering the effects of walkability on older people separately from the general population. This chapter will briefly define the concept of demographic change and provide an overview of population forecasts in Germany. The following sections will discuss what ageing means and how it is affected by the physical-social environment. Finally, ‘healthy-ageing’, the World Health Organisation’s (WHO) current approach to addressing the challenges posed by demographic change, will be introduced.

2.1 Demographic Change

Technically, the term ‘demographic change’ simply means that the structure of a specific population is undergoing transformation. However, when the term is used today, it carries with it the implicit meaning of an ageing population, as well as the prejudice that such change represents a burden for societies. While the UN has chosen 60 to mark the age at which someone becomes ‘old’ (WHO 2002a), due to differences in life expectancy, retirement age, individual characteristics and social perceptions, there is no universal agreement regarding the point at which someone becomes old. In
Germany, 65 is frequently considered the beginning of the ‘third-age’ (i.e. retirement phase) (Tesch-Römer & Wurm 2009). It is possible to define additional categories among the old. For example, Tesch-Römer and Wurm (2009) distinguish between the ‘young old’, those aged between 65 and 84 and the ‘old old’, or those in the ‘fourth age’, who are aged 85 and above. In contrast, the Bundeszentrale für gesundheitliche Aufklärung (Federal Centre for Health Education) (BZgA) classifies those aged between 65 and 80 as ‘older people’ and those aged above 80 as the ‘very old’ (Amrhein et al. 2015; Heusinger, Kammerer & Wolter 2013).

For simplicity this study uses the term ‘older people’ to refer to all people aged 65 years and over. However, it is important to note the diversity inherent in the ageing process and therefore the degree of arbitrariness in choosing the cut-off point between life phases. Indeed, as Tesch-Römer and Wurm (2009) have noted, ageing (the process) should be distinguished from age (a life-stage). 65 years marks the age at which Germans traditionally enter retirement\(^2\), however, there are marked differences in the health and functional capacity of older people (Lawton 1980; WHO 2015c). Rather, than being a homogenous group, there are increasing differences between people which accumulate over the life course, and result in significant heterogeneity among older people (Heusinger, Kammerer & Wolter 2013; Tesch-Roemer 2012; WHO 2002b, 2015c). The process of ageing will be discussed in Section 2.2 of this chapter.

### 2.1.1 Demographic Change in Germany

In European and other ‘Global-North’ countries, the demographic change is caused by three key factors: decreasing fertility rates, increasing life expectancy and large birth cohorts (specifically baby-boomers) reaching retirement age (Rechel et al. 2013; UNECE & European Commission 2015). According to the most recent population projections of the German Federal Statistical Office (DESTATIS)\(^3\) the ageing of the

---

\(^2\) The retirement age was recently lowered to 63 years in Germany. However, no changes have (yet) been made to the age at which people are considered ‘old’.

\(^3\) DESTATIS is responsible for making regular population projections based on census data. While a number of different scenarios are tested in total, results presented by DESTATIS generally show two variants of projections. The first uses a decline in net-migration from 500,000 to 100,000 by 2021 which then remains constant, and the second uses a decline in net-migration to 200,000 by 2021 which then remains constant (Statistisches Bundesamt 2015a). In both variants, projections have assumed the fertility
population is not expected to abate anytime soon, rather to increase as a result of the baby-boomer generation moving into retirement age. Figure 1 below illustrates the change in population structure expected to occur between 2013 (black outline) and 2060 (yellow for variation 1 with low immigration, orange for variation 2 with higher immigration).

By 2030 the number of people aged over 65 is predicted to have increased by around 29% from 2013 figures (Statistisches Bundesamt 2015a). The biggest changes (in terms of percentage increase) are expected to occur with the proportion of the population aged 80 and over. In 2013 there were around 4.4 million in this group, which represented 5% of the population. As shown in Figure 2 below, by 2030, this group will represent around 8% of the population, and by 2060, comprising around 9 million people, this group will represent 12-13% of the population (Statistisches Bundesamt 2015a).

rate remaining more or less constant at 1.4 and a life expectancy at birth increasing by seven years to 84.8 years for males and by six years to 88.8 years for females by 2060.
Using Walkability to Support Healthy Ageing

Figure 2: Population age groups in %
(Statistisches Bundesamt 2015a, p. 19)
1 Based on Projections from Variant 1

Figure 2 and Figure 3 illustrate why it is important to examine the demographic change occurring between now and 2030 instead of focusing on the long-term predictions that extend to 2060. The next few years are going to be decisive in terms of increases in the actual numbers as well as the percentage of people aged 65 and over. Even once absolute numbers start to decrease, a declining population will mean that the percentage of the population aged 65 and over will remain high for some time.

Figure 3: Population aged 65 and above
(Statistisches Bundesamt 2015a, p. 24)
From 2014 Projections based on Variant 1
The age profile of Berlin looks quite different from that of Germany as a whole. In keeping with its reputation as being a ‘youthful city’ (YouthfulCities 2015), Berlin still has quite a young population (see Figure 4 below). This will remain the case in 2030, by which time the German population will have already aged considerably (see Figure 5 below).

![Figure 4: Age structure 2015](StatistischesBundesamt_n.d.)

![Figure 5: Projected age structure 2030 (Variant 1)](StatistischesBundesamt_n.d.)
Although Berlin will lag behind the demographic change occurring in Germany as a whole, it is by no means exempt. The following two tables illustrate that the size of the population aged 65 and above will also increase in Berlin in terms of actual numbers and percentage of the total population. Furthermore, comparing these tables with Figure 3 above, it can be seen that growth in this population segment will continue after it has begun to decrease in Germany as a whole.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population in Berlin (1,000)</th>
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<tbody>
<tr>
<td></td>
<td>Variant 1</td>
</tr>
<tr>
<td></td>
<td>65-79</td>
</tr>
<tr>
<td>2013</td>
<td>508</td>
</tr>
<tr>
<td>2020</td>
<td>495</td>
</tr>
<tr>
<td>2030</td>
<td>583</td>
</tr>
<tr>
<td>2040</td>
<td>603</td>
</tr>
<tr>
<td>2050</td>
<td>616</td>
</tr>
<tr>
<td>2060</td>
<td>718</td>
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</tbody>
</table>

Table 1: Number of people in Berlin aged 65 years and over
(Own representation of data from Statistisches Bundesamt 2015b)

<table>
<thead>
<tr>
<th>Year</th>
<th>% Population in Berlin (1,000)</th>
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<tbody>
<tr>
<td></td>
<td>Variant 1</td>
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<tr>
<td></td>
<td>65-79</td>
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<tr>
<td>2013</td>
<td>14.85%</td>
</tr>
<tr>
<td>2020</td>
<td>13.55%</td>
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<tr>
<td>2030</td>
<td>15.71%</td>
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<td>2040</td>
<td>16.34%</td>
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<tr>
<td>2050</td>
<td>16.95%</td>
</tr>
<tr>
<td>2060</td>
<td>20.27%</td>
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</tbody>
</table>

Table 2: Percentage of population in Berlin aged 65 years and over
(Own representation of data from Statistisches Bundesamt 2015b)
It is important to note that population projections are extremely difficult to make. Already, between 2011 and 2014 Berlin has grown by more than the upper predictions (Senatsverwaltung für Stadtentwicklung und Umwelt n.d.). There are many factors that affect the demographics of a population, and while some of these can be controlled, many cannot. Policies may try to influence birth rate, but there is no guaranteed effect. In contrast, a decision to increase the number of migrants can have an immediate effect, however, it is almost impossible to predict such a decision. Right now we are witnessing an influx of people seeking asylum in Germany. This is expected to further increase the population growth rate of Berlin, with 40,000 asylum seekers expected to be settled in Berlin in 2015 alone (Senatsverwaltung für Stadtentwicklung und Umwelt n.d.).

2.2 Ageing
The previous section has established that the populations of Germany and Berlin are ageing. This section will briefly explore what ageing actually means. While a full discussion of the ageing process lies beyond the scope of this paper, it is important to establish a basic understanding. This is necessary to help inform the discussion concerning the extent to which walkability can be considered a neighbourhood level determinant of social participation of older people.

What first comes to mind when thinking about ageing are probably the biological changes. According to the WHO, at this level

ageing is associated with the gradual accumulation of a wide variety of molecular and cellular damage [...] Over time, this damage leads to a gradual decrease in physiological reserves, an increased risk of many diseases, and a general decline in the capacity of the individual. Ultimately it will result in death

( WHO 2015c, p. 25)

These biological changes can be grouped broadly into six main categories: (1) decline in movement function related to loss of muscle mass, decrease in bone density and degeneration or articular cartilage; (2) decline in sensory functions, in particular vision and hearing; (3) decline in cognitive functions; (4) changes in sexuality (although the extent to which this is determined by age is unclear); (5) decline in immune functions; (6) deterioration in the quality of the skin (WHO 2015c). In addition there are a number of so-called ‘geriatric syndromes’, which tend to occur as a result of multiple underlying factors (WHO 2015c). Five examples are: frailty, urinary incontinence, falls,
delirium, and pressure ulcers (WHO 2015c, p. 63). It is important to note that all of these can have follow on effects. For example, where hearing loss is not addressed, communication can be impaired and this can lead to social isolation, lack of autonomy, depression, anxiety and cognitive decline (WHO 2015c). The risk of non-communicable chronic diseases, such as heart disease, stroke, chronic respiratory disorders, cancer and dementia also increases with age (WHO 2015c, p. 26). While the likelihood of experiencing multi-morbidities increases with age, biological changes do not occur in a linear fashion, nor can they be predicted based solely on a person’s age (WHO 2015a).

It is also important to recognise the interaction between biological and social changes. Some changes, such as retirement may be either mandated based on a person’s chronological age but may not correspond to the individual’s functioning capacity. Older people may also have to adapt to the loss of family and friends, relocation of children and moving into age-appropriate housing (WHO 2015a). All of these changes can also be considered part of the ageing process (WHO 2015a). Furthermore, what constitutes the ageing process is dynamic and changes in line with other societal changes. For example, whereas multiple generations of a family used to live together in the one house, this is no longer the case, and older people often end up living alone (Beard & Bloom 2015; WHO 2015a). This means that they have fewer resources at their disposal than they would have in a shared household (Beard & Bloom 2015) and that they are at increased risk of social isolation, loneliness, depression and suicide (Beard & Bloom 2015; Van den Berg et al. 2015).

2.3 Physical-Social Environments

Some of the changes in health in older age mentioned in the previous section are determined by genetics and behaviour (for example diet, level of PA and tobacco use) (WHO 2002b). However, much of the diversity in ageing can be directly or indirectly attributed to the physical and social environment (Wahl & Oswald 2010; WHO 2015c). This helps explain why the greatest disease burden in old age can be attributed to non-communicable diseases (Beard & Bloom 2015; WHO 2015c).

The importance of the physical and social environments for health was formally recognised by the public health fraternity in the 1986 Ottawa Charter for Health
Promotion. Although not yet using the term, the charter highlighted the social determinants of health (SDH) and therefore the responsibility for health promotion that rests with sectors other than health. The term, *social* determinants of health can be misleading, as in actual fact, it includes both social and physical factors. SDH are defined as “conditions in which people are born, grow, work, live and age” (WHO n.d.). These are important especially because they largely explain health inequalities, “the unfair and avoidable differences in health status seen within and between countries” (WHO n.d.). As such, ‘create supportive environments’ was listed as one of the key action areas of health promotion (WHO 1986). This acknowledgment of the closely woven interrelationship between people and their environment in turn constituted the basis for a socio-ecological approach to health (WHO 1986), which has gained increasing traction in public health research since.

Davison and Lawson’s (2006) definition of the physical environment has been adapted by others researching walkability (see for example: Van Cauwenberg et al. 2014) and social participation (see for example: Levasseur et al. 2015). In so doing, Van Cauwenberg et al. define the physical environment as

… the characteristics of the physical context in which people spend their time (e.g. home, neighborhood), including aspects of urban design (e.g. presence of sidewalks), traffic density and speed, distance to and design of venues for PA (e.g. parks), crime and safety.4

(2014, p. 24)

However, while there is some degree of consensus regarding a definition of the physical environment, the same is not true regarding the definition of the social environment (Van Cauwenberg et al. 2014; McNeill, Kreuter & Subramanian 2006). Wahl and Oswald (2010) provide a useful alternative with the use of the term ‘physical-social environment’. They do this because they consider that “there is no ‘objective’ environment ‘out there’ without social interpretation, cultural meaning, ongoing historical reassessment, and *Zeitgeist* influences” (Wahl & Oswald 2010, p. 112). Therefore, the term ‘physical-social environment’ will be used for the remainder of the paper.

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4 Crime and safety are included as they are explicitly related to aspects of the physical environment such as rubbish and street lighting (Davison & Lawson 2006).
The physical-social environment influences health outcomes, even in older age. Ongoing interactions with the environment determines functioning over and above an individual’s physical and mental capacities (WHO 2015c, p. 26). At a basic level, environments that are unsafe or present multiple physical barriers are likely to result in older people choosing to stay at home rather than go out, thus increasing their susceptibility to isolation, depression and reduced levels of fitness (WHO 2002b, p. 27). Therefore, although the physical-social environmental barriers may be experienced more acutely by older people, conversely, supportive environments can compensate for physiological and social changes associated with ageing (WHO 2007, p. 4). This is emphasised in a recent report on ageing and health by the WHO, which states that

Physical and social environments are powerful influences on Healthy Ageing. They shape trajectories of capacity and can extend what a person is able to do (their functional capacity). Age friendly environments allow older people to be and to do what they have reason to value by enabling them to maximize both their capacity and their ability

(WHO 2015c, p. 218, original emphasis)

In other words, an enabling environment allows people to do more than they would ordinarily, based on their individual level of capacity (WHO 2015c). This echoes seminal work undertaken by gerontologist M. Powell Lawton in the ‘70s and ‘80s, which recognised the importance of the social and physical characteristics of the local neighbourhood for the elderly, in particular those who are impaired or deprived (Lawton 1980, p. 142).

2.4 Healthy Ageing

‘Healthy ageing’ and ‘active ageing’ policies have gained increasing support since around 2000 from policy makers and researchers (see e.g. Boudiny 2013; Leibnitz-Gemeinschaft 2015; WHO Regional Office for Europe 2012b). However, despite this, they are used interchangeably and/or to mean different things by different actors (Boudiny 2013; Fuchs et al. 2013; Victorian Department of Health 2012; WHO 2015c). Without a clear supporting definition, both terms are potentially problematic. This is because they imply some level of physical or physiological functioning and therefore risk excluding parts of the population, particularly the very old, for whom such policies are intended to benefit.

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5 See Boudiny (2013) for a critical overview of various definitions and classifications of ‘active ageing’ and associated terms.
Until recently, the WHO predominantly used the term ‘active ageing’ (e.g. WHO 2002b), and it was this paradigm which shaped the design of its guide to age-friendly cities (WHO 2007). The WHO defines active ageing as:

the process of optimising opportunities for health, participation, and security in order to enhance quality of life as people age

(WHO 2002a, p. 11)

However, in its recently released World Report on Ageing and Health, there is no ambiguity that ‘healthy ageing’ is now the preferred term to conceptualise its approach to ageing. Given the WHO’s broad definition of health, it stands to reason that ‘healthy ageing’ does not just refer to remaining free from disease and disability as we grow older, but rather “the ability to maintain optimal physical, mental and social well-being as we age” (Kawachi 2014, p. 70). In other words, the focus is not on prolonging life, but rather optimising its quality (Kawachi 2014).

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Figure 6: Components of healthy ageing identified in the literature.
(Fuchs et al. 2013)

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6 The preamble to the constitution of the WHO states that “health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO 1948).
In practice, although some actors take a broad understanding of healthy ageing\(^7\), many do not. Fuchs et al. (2013) identified the components and their determinants which are commonly used in definitions of healthy ageing (see Figure 6 above). This revealed that a number of studies conceptualise healthy ageing in terms of being disability free, or having no cognitive or functional impairment. This conceptualisation of healthy ageing is highly problematic because, as Boudiny (2013) has noted, it risks excluding certain sub-populations. In its recent report, the WHO also highlights the problematic nature of using the term to distinguish between healthy and unhealthy individuals (WHO 2015c). Therefore it proposes the following definition of healthy ageing

\[
\text{the process of developing and maintaining the functional ability that enables well-being in older age}
\]

( WHO 2015c, p. 28, emphasis removed)

Functional ability is understood here as the “combination of the individual and their environments, and the interaction between them” (WHO 2015c, p. 29). This definition therefore recognises the cumulative effects of a range of factors (including environmental) throughout the life course on the intrinsic capacity of an individual as well as the continuing influence of an individual’s interactions with their environment (WHO 2015c).

I have decided to frame this study in the context of the healthy ageing paradigm. This is not only because it is the current approach of the WHO, but also because it has a broader scope than active ageing, and, importantly, recognises the difference between intrinsic and functional capacity.

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\(^7\) For example a 2012 report undertaken by EuroHealthNet for the (German) Federal Centre for Health Education (BZgA), states that the aims of healthy ageing are “more than increasing the number of healthy life-years without any activity limitation and disability or disease” (Stegeman et al. 2012, p. 9).
3 SOCIAL PARTICIPATION

The term ‘social participation’ almost invariably features in discourse about ageing societies. Social participation is frequently promoted in healthy- and active-ageing approaches as well as by the age-friendly city and age-friendly environment movements. This chapter will define the term ‘social participation’ as it has been applied in this study. It will then briefly explain the concept of social capital and how social participation can be considered an element of this. This is important because it provides the basis for understanding how and why social participation affects the health of older people, which will be discussed at the end of the chapter.

3.1 Definition

There are multiple definitions and dimensions of participation, which can differ considerably depending on field of activity and context (Bertermann & Olbermann 2011). This study focuses on one specific type of participation, namely social participation. However, also in this case, there is no agreed definition of the term (Levasseur et al. 2010; Ziegler 2012) despite increasing interest in the topic (Richard et al. 2009). Variations and inconsistencies between definitions can be clearly seen in the following examples. In their study into widowhood, Utz et al. define social participation as “social interaction with persons other than a spouse” (Utz et al. 2002, p. 523). Under

[8] The term ‘participation’ is often used interchangeably with the term ‘social participation’ (Piškur et al. 2013). As there are other types of participation (political, economic, cultural) this paper will stick to the use of the term ‘social participation’. For further discussion about the two terms, see Piškur et al. 2013.
this definition they include both formal (e.g. meeting or church attendance) and informal (e.g. telephone and personal contact with friends) social roles (Utz et al. 2002, p. 523). Another broad understanding conceptualises social participation as sociability and the possibility to experience being significant for others as well as being mobile (Falk et al. 2011, p. 102). In contrast, Bukov et al. propose a narrower definition of social participation, describing it as the “socially oriented sharing of individual resources” (2002, p. 510).

Noting that life cycle transitions and declines in individual capacities result in changes to social participation in old age (Bukov, Maas & Lampert 2002), it was important to choose a definition for this study that was specifically applicable to the lives of older people. This study bases its definition of social participation on the taxonomy of social activities (i.e. the ‘what’ of social participation), which was developed by Levasseur et al. (2010). The taxonomy defines a continuum of six levels of involvement of the individual in social activities (Levasseur et al. 2010) (see Figure 7 below). It has been used in other studies concerned with the relationship between older people and place (see for example: Allenspach 2013; Richard et al. 2013). As can be seen in Figure 7 below, social participation does not necessitate partaking in an organised activity. This contrasts with many definitions of healthy- or active- ageing as well as age friendly cities which frequently refer (or at least allude) to participation in organised activities (see for example: WHO 2007). Adopting a broader definition of social participation acknowledges variation in individuals’ capacities (incl. physical, cognitive, financial, cultural), desires and preferences.

![Figure 7: Proposed taxonomy of social activities](Levasseur et al. 2010).
Based on the findings of their analysis, Levasseur et al. define social participation as “a person’s involvement in activities that provide interaction with others in society or the community” (2010, p. 2148). This definition corresponds to the range of activities from level three onwards in Figure 7 above (Levasseur et al. 2010). This paper is primarily concerned with levels 3 and 4, rather than levels 5 and 6, which Levasseur et al. (2010) define as ‘social engagement’\(^9\). According to the authors, social engagement “involves a desire for social change or to be heard to affect community choices” (Levasseur et al. 2010, p. 2147).

In addition to the distinction between participation in formal and informal social activities, a distinction is often made between spontaneous (unplanned) and organised (planned) social interaction\(^10\). As recognised by Leyden (2003, p. 1546), unplanned interactions, such as running into neighbours while out walking, shopping or spending time in a park can be important in establishing a sense of connection between people and places. This in turn, can be one way that social participation contributes to enhancing the social capital of a neighbourhood.

### 3.2 Social Participation & the Bigger Picture of Social Capital

Before exploring the effects of social participation on health, it is important to understand how social participation relates to the broader concept of social capital as well as to distinguish it from related concepts. Social participation has been identified as a key dimension of the concept of social capital (Buffel et al. 2014; Richard et al. 2009). However, some public health definitions of social capital would not support this approach. Without trying to assert the supremacy of one conceptual framework over another, this section will briefly explore how social participation can be considered an element of social capital and the approach that has been adopted by this study.

There is no universal agreement on a definition for social capital, largely because the term has been appropriated by different fields and for different purposes (Kawachi, Takao & Subramanian 2013). Broadly speaking, there are two distinct ways of...
conceptualising social capital, one which is focussed on community dimensions and the other which is focussed on individual dimensions (Kawachi, Takao & Subramanian 2013; Murayama, Kondo & Fujiwara 2013; Villalonga-Olives & Kawachi 2015). Each school of thought follows the perspective of one of the two pre-eminent theorists of social capital. French sociologist Pierre Bourdieu is considered to take an individual, or ‘network’ approach to social capital, defining social capital as

the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition

(1986, p. 248)

In contrast, American political scientist Robert Putnam’s approach is described as ‘communitarian’ (Whitley 2008, p. 97). In his definition of social capital, more emphasis is placed on horizontal civic and associational participation and social capital is therefore even able to benefit individuals who do not contribute to its creation (Whitley 2008, p. 97).

Unlike the ongoing debates about social capital in the social and political sciences, Moore et al. contend that consensus has been reached in the public health literature on this topic (2005, p. 1331). According to Carpianno (2007) and Moore et al. (2005, 2006), most public health studies on social capital have been based on Putnam’s theory of social capital (i.e. communitarian approach), while network approaches are relatively absent (Moore et al. 2005). Moore and colleagues (2005) identify a 1997 paper by Kawachi et al. as playing a central role in driving the public health discourse on social capital. In this paper, the authors refer to social capital as being “the features of social organisation, such as civic participation, norms of reciprocity, and trust in others, that facilitate cooperation for mutual benefit” (Kawachi et al. 1997, p. 1491). However, Carpianno contends that Bourdieu’s (network) theory of social capital, is more useful for public health because “it draws more explicit attention to community conditions and the socioeconomic factors that influence them” (Carpianno 2007, p. 640). This aligns with the SDH approach, which forms an important basis for this study. Furthermore, the network approach allows for a broader understanding of participation, rather than concentrating on civic participation, as per the communitarian approach. Network approaches to social capital are therefore considered more appropriate for exploring the linkages between walking, health and social participation.
3.3 Social Participation & the Health of Older People

Just as social capital should not be equated with social support, (Kawachi & Berkman 2014; Kawachi, Takao & Subramanian 2013; Wood & Giles-Corti 2008), it is also important to distinguish social participation from social support. As shown in Berkman and Krishna’s conceptual model (see Appendix 1) social support and social engagement\(^1\) are two independent pathways through which social networks affect health. This section will provide a brief overview of the evidence exploring the effect of social participation on the health of older people.

In their review of the literature, Buffel et al., found that socially involved older adults “report higher levels of quality of life, better self-rated health and mental and physical well-being, and lower levels of insecurity” (Buffel et al. 2014, p. 656) than those who are not. Similarly, Kanamori et al. (2014) and Ichida et al. (2013) draw attention to existing research which has shown a positive correlation between social participation and health, including improved functional status in older people, a lower risk of all-cause mortality as well as a range of specific causes of mortality, morbidity and disability. To cite a few specific studies, Bennett found that even after controlling for health, age, and sex, low levels of social engagement (used as a synonym for social participation) has a negative effect on mortality (Bennett 2002). Similarly, Glass et al. (1999) concluded that participation in social activity (with limited or no fitness component) was related to a decreased risk of all cause mortality equivalent to participation in fitness activities. James et al. (2011) found that social activity\(^\text{12}\) was associated with a decreased risk of disability (James et al. 2011).

There is also a substantial amount of research linking social engagement and participation to the cognitive function of older people (Berkman & Krishna 2014) as well as depression (Stegeman et al. 2012). Berkman and Krishna (2014) suggest that the relationship with cognitive function may operate along two pathways: directly, by

---

\(^1\) Although using the term social engagement in their model, in explaining this pathway, the authors use the terms social participation and social engagement side-by-side, and their description broadly aligns with Levasseur et al’s (2010) definition of social participation.

\(^\text{12}\) Although using the term “social activity”, measurement of it more or less corresponds with understanding of social participation taken by this paper.
activating a physiologic response, “as well as indirectly contributing to a sense of coherence and identity that allows for a high level of well-being” (Berkman & Krishna 2014, p. 245). It is also acknowledged that the lack of social participation can have negative health effects (Kümpers & Wolter 2015). In a German sample, Pollack and von dem Knesebeck (2004) found that lack of participation\(^{13}\) was associated with poor self-rated health and depression. However, as social exclusion and social isolation represent not only the lack or absence of social participation, but rather the cumulative interaction of inequalities on various dimensions (Theobald 2005), the health effects of these are not considered in this thesis.

Recently, much of the evidence supporting the existence of a relationship between social participation and the health of older adults has come from Japan. The reason lies no doubt in part because by 2012, Japan already had 31.1% of its population aged 60 years and over (Kanamori et al. 2012), making it the only country to have crossed the 30% threshold (WHO 2015c). One Japanese municipality actively tried to “boost social participation by older individuals as a way of preventing long-term disability” (Ichida et al. 2013, p. 84). It did this by creating so-called ‘salons’, essentially community centres, to provide a space for elderly people to meet and participate in various social activities. The impact of these salons on self-rated health was evaluated, as not enough time had passed to be able to assess the impact on functional disability. The results were able to demonstrate a “significant link between salon participation and self-rated health” (Ichida et al. 2013, p. 88).

Another Japanese study found an inverse relationship between social participation (in formal organisations) and risk of incident functional disability, with the effect increasing with greater variety of organisations in which subjects participated (Kanamori et al. 2014, p. 6). An earlier study also focussed on the issue of incident functional disability. In this instance, the authors wanted to test the hypothesis that participation in an organised sporting activity is beneficial beyond the actual

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\(^{13}\) Participation was measured by attendance at an organised local activity at least once per month.
physiological effects of exercising (Kanamori et al. 2012, p. 1). The table below shows how subjects in the study were classified.

<table>
<thead>
<tr>
<th>Sport organization</th>
<th>Participation</th>
<th>Non-participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once a month or more</td>
<td>Active Participant (AP)</td>
<td>Exercise Alone (EA)</td>
</tr>
<tr>
<td>Less than once a month</td>
<td>Passive Participant (PP)</td>
<td>Sedentary (S)</td>
</tr>
</tbody>
</table>

Table 3: Classification of subjects

(Kanamori et al. 2012, p. 2)

The key finding of this study was that within the exercise groups, the risk (of developing functional disability) was found to be higher for those in the EA group than the AP group, despite people in this group reporting more frequent exercise than in the AP group. Even more interesting, was that the risk for the PP group was also found to be lower than for the EA group, thus suggesting that the health promoting aspect of organised sports “was not the part associate with physical activity, but the social participation per se” (Kawachi 2014, p. 71). Furthermore, adding social support to the covariates in the model barely affected the risk in the EA and S groups, suggesting that social support cannot explain the decreased risk among the participant groups (Kanamori et al. 2012, p. 6).

While there appears to be considerable evidence linking the social participation of older people to positive health outcomes, there are a number of limitations with the literature. These include: (1) terms being used interchangeably; (2) failure to define social participation or explain why it is being measured in a certain way; (3) failure to take into account frequency or level of involvement in group activity (e.g. Glass et al. 1999; Kanamori et al. 2014); (4) difficulties in determining causality (e.g. sick people less likely to be socially active). Thus while it appears that social participation is likely to confer multiple health benefits on older people, the strength of these associations and the precise mechanisms through which this occurs needs to be investigated further.
Using Walkability to Support Healthy Ageing
4 WALKABILITY

In introducing the concept to the German-speaking realm, Bucksch and Schneider (2014a, p. 9) note that walkability is about more than just the physical quality of footpaths (*Begehbarkeit*), but rather, how ‘activity-friendly’ (*bewegungsfreundlich*) the urban realm is. This is important, because one of the main ways the environment can influence health is through providing the opportunity for movement (Bucksch & Schneider 2014b). This chapter will provide an introduction to the concept of walkability and then present an overview of the evidence regarding the relationship between walkability and health (first in general, and then specifically in relation to older people). The last part of this chapter will explore the potential to expand the concept of walkability beyond its focus on PA.

4.1 Definitions and Measurements

Although now widely used in public health, the concept of walkability is recognised as coming from transportation research in the USA (Bucksch & Schneider 2014b; Grasser et al. 2013; Kerr 2014). The original emphasis on the relationship between walkability and active transportation modes in the transportation field seems to have been carried over into public health research. As Hanibuchi and Nakaya have noted, researchers in the field of public health examine “whether or not living in a walkable neighbourhood increases the levels of physical activity, mainly through walking” (2013, p. 135). Although the health benefits of PA have long been established, according to a 2009 report by the WHO, physical inactivity ranks fourth in global risk factors for mortality.
Using Walkability to Support Healthy Ageing

(WHO 2009)\textsuperscript{14}. Therefore, a focus on how walkability can support PA is understandable.

In the absence of a universally agreed definition, Leslie et al. (2007) provide a useful description of walkability, conceptualising it as

\[
\text{the extent to which characteristics of the built environment and land use may or may not be conducive to residents in the area walking for either leisure, exercise or recreation, to access services, or to travel to work (2007, p. 113).}
\]

The three main components of walkability are generally considered to be: residential density, land use mix and street connectivity (see for example: Van Cauwenberg et al. 2011). This comes from the field of travel planning, in particular from a 1997 book by Cervero and Kockelman which coined the term ‘three Ds’, referring to density, diversity and design respectively (Ewing & Cervero 2010). Later, (through work by Ewing & Cevero, 2001; and Ewing et al. 2009) two additional Ds were added to the concept: destination accessibility and distance to transit (Ewing & Cervero 2010). There are a number of other elements, which are also thought to affect the walkability of the neighbourhood. These include: presence of footpaths/sidewalks, street lighting, amenities (benches etc.); safety (traffic and crime); access to green/open space, recreational facilities; aesthetics; population density; employment density; degree of urbanisation; neighbourhood type; and degree of urban sprawl (Van Cauwenberg et al. 2011; see for example: McCormack & Shiell 2011).

Evidence regarding the relationship between the built environment and PA has been synthesised by a number of systematic reviews undertaken in this decade alone (Van Cauwenberg et al. 2011; Ding et al. 2011; Durand et al. 2011; Ferdinand et al. 2012; Grasser et al. 2013; Van Holle et al. 2012; Mackenbach et al. 2014; Mayne, Auchincloss & Michael 2015; McCormack & Shiell 2011; Moran et al. 2014; Oliveira et al. 2014; Scheepers et al. 2014). Many of the studies identified in these reviews differentiate between two main types of walking. Utilitarian walking, or walking for transport, characterises walking done to access services, workplaces, public transport,

\textsuperscript{14} For an overview of health related impacts from physical inactivity see Wang et al. (2016).
and shopping etc. In contrast, walking itself is the purpose when it is done for recreation or leisure. It is generally agreed that the two types of walking are affected by different aspects of the physical environment. Overall, measures of the physical environment are more frequently associated with transportation PA than recreational PA (Van Holle et al. 2012; McCormack & Shiell 2011). This is perhaps not unsurprising, given that the original concept of walkability comes from the transportation field.

Noting that the majority of studies examining the relationship between walkability and PA have been undertaken in North America and Australia, and questioning its applicability to the European context, Van Holle et al. (2012) undertook a systematic review of Europe-specific evidence of the relationship between the physical environment and PA in adults. A total of 70 studies were identified by the review, with 60 of these published since 2015, indicating that this is a growing area of research (Van Holle et al. 2012). However, while seven of these included results for Germany, these were part of multi-country studies (Van Holle et al. 2012). The review found evidence of a number of positive relationships between specific aspects of PA and the following environmental factors: walkability; access to shops/services/work; safety from traffic; urbanization degree; and quality of the environment (Van Holle et al. 2012). A negative relationship was found between urbanisation degree and total PA (Van Holle et al. 2012). Relationships between environment elements were found predominantly with transport-related aspects of PA (Van Holle et al. 2012). While the results were generally comparable with those from non-European based studies, a number of differences (e.g. safety and aesthetics were found to be less important in European studies) indicate the need for European-specific studies (Van Holle et al. 2012).

### 4.2 Walkability for Older People

The majority of studies examining walkability in the context of older people have also been conducted in North America (Van Cauwenberg et al. 2011) and focused on PA (Bödeker & Reyer 2014). Although the benefits of PA for older people have been well established (Bödeker & Reyer 2014; Rechel et al. 2013; WHO 2002b, 2015c; WHO Regional Office for Europe 2012b), there are high rates of sedentarism among old people (WHO 2002b). In the 2009 study into the health of Germans, of those aged 65 years and over, only 12.9% of women and 15.8% of men satisfied the requirement of exercising for a minimum of 30 minutes on at least five days per week (RKI 2009). It is
therefore unsurprising that PA is frequently listed as a core component of a healthy ageing strategy (see for example: WHO Regional Office for Europe 2012b).

The importance of exploring walkability for older people separately from the general population has been acknowledged (see for example: Bödeker & Reyer 2014; Borst et al. 2008; Van Cauwenberg et al. 2011; Lockett, Willis & Edwards 2005; Mendes de Leon et al. 2009). In fact, as Mendes de Leon et al. note, neighbourhood conditions “may be more important in this population due to the tendency of older persons to increasingly restrict most daily activities to the immediate vicinity of their homes” (2009, p. 157). Just as gender, income, ethnicity and car ownership have been recognised as moderators of the relationship between the physical environment and PA (Kerr 2014), age also moderates this relationship (Van Cauwenberg et al. 2011; Mohnen & Schneider 2014). This is perhaps most obvious in terms of the distances older people are able to walk. Proximity to resources and services has therefore widely been found to be an important component of an ideal neighbourhood for older people (Van Cauwenberg et al. 2014; Glass & Balfour 2003; Lawton 1980, p. 19; Lockett, Willis & Edwards 2005; Mahmood et al. 2012), particularly for those with physical limitations (Glass & Balfour 2003). In contrast, greater street connectivity may not necessarily be beneficial for older people (and children) as more intersections are potentially more dangerous (Kerr 2014).

In their overview of research to date on the relationship between environmental characteristics and the PA of older people, Bödeker and Reyer (2014) identify a number of additional elements of walkability which were investigated in addition to the standard aspects of density, land-use mix and connectivity. These elements include: availability of footpaths; quality of footpaths (e.g. condition, lowered kerbs); access to facilities/services required for daily needs; availability of public toilets, topography; availability of benches; connections to public transport; security (general and traffic related; and aesthetics (e.g. architecture, rubbish, graffiti, dog excrement). However, although identifying some positive associations, this paper (Bödeker & Reyer 2014), as well as the review by Van Cauwenberg et al. (2011), found that results were generally inconclusive, inconsistent and often non-significant. Van Cauwenberg et al. (2011) suggest that this is due to methodological issues (e.g. differences in measurements),
rather than the absence of a relationship between built environment and PA in older adults.

The Dutch study by Borst et al. (2008)\(^\text{15}\) didn’t examine walking behaviour per se, but rather seniors’ perceptions regarding attractiveness of streets for walking. Litter, high dwelling density, high-rise buildings, and vacant buildings were associated with negative perceptions (Borst et al. 2008). Elements found to be positively associated with perceived attractiveness included: zebra crossings, public transit stops, trees, parks, benches, busy streets, presence of shops as well as slopes and stairs (Borst et al. 2008). While some of these associations may seem surprising, the authors draw attention to the importance of considering the environment more broadly. For example, in the case of busy streets, it is most likely not the busy street per se that is attractive, but the fact that it might have wide footpaths and be a centre of human activity (Borst et al. 2008). This highlights the limitations of purely quantitative methods.

Recently, Moran et al. (2014) conducted a systematic review of qualitative studies regarding the relationship between the physical environment and PA in older people. 31 studies were identified, however, geographic distribution was more balanced, with 17 studies from North America and 11 from Europe. Moran et al. (2014) identified the five environmental themes and eleven sub-themes from the data (Table 4 below).

\(^{15}\)This study was not included in the review by Van Cauwenberg et al., although a similar study by predominantly the same authors was (Borst et al. 2009).
Using Walkability to Support Healthy Ageing

<table>
<thead>
<tr>
<th>Theme</th>
<th>Subtheme</th>
<th>Environmental Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian Infrastructure</td>
<td>Sidewalk’s Characteristics</td>
<td>* Sidewalk’s presence and continuity&lt;br&gt;* Sidewalk’s quality and maintenance&lt;br&gt;* Sidewalk’s slopes and curbs&lt;br&gt;* Temporary obstacles on sidewalks</td>
</tr>
<tr>
<td></td>
<td>Separation between pedestrians and other non-motorised transport</td>
<td>* Cyclists on sidewalks&lt;br&gt;* Skateboarders and rollerbladers on sidewalks</td>
</tr>
<tr>
<td>Safety</td>
<td>Crime-related safety</td>
<td>* Lack of street lighting&lt;br&gt;* Upkeep&lt;br&gt;* Other people&lt;br&gt;* Presence of authorized personnel</td>
</tr>
<tr>
<td></td>
<td>Traffic-related safety</td>
<td>* Zebra-crossing characteristic&lt;br&gt;* Reckless driver’s behaviour</td>
</tr>
<tr>
<td>Access to facilities</td>
<td>Access to exercise opportunities</td>
<td>* Access to recreational facilities&lt;br&gt;* Access to senior oriented group activities&lt;br&gt;* Access to green open space</td>
</tr>
<tr>
<td></td>
<td>Access to daily destinations</td>
<td>* Access to daily destinations&lt;br&gt;* Access to public transit</td>
</tr>
<tr>
<td></td>
<td>Access to rest areas</td>
<td>* Access to benches&lt;br&gt;* Access to public washrooms</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>Buildings and streetscape</td>
<td>* Private property&lt;br&gt;* Public realm</td>
</tr>
<tr>
<td></td>
<td>Natural Scenery</td>
<td>* Presence of greenery&lt;br&gt;* Presence of water</td>
</tr>
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<td>Environmental conditions</td>
<td>Weather</td>
<td>* Cold weather&lt;br&gt;* Hot weather&lt;br&gt;* Warm weather</td>
</tr>
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<td></td>
<td>Environmental quality</td>
<td>* High environmental quality&lt;br&gt;* Pollution</td>
</tr>
</tbody>
</table>

Table 4: Themes, subthemes and environmental factors  
(Source: adapted from Moran et al. 2014)

The review showed that design features were important for older people. For example, benches should be easy to sit on for older people, and public toilets should be clean (Moran et al. 2014). The authors suggest this differentiation between presence and quality of an environmental features may help to explain inconsistent results between quantitative studies (Moran et al. 2014). Similarly, Van Cauwenberg et al. (2012, pp. 9–10) draw attention to the fact that in contrast to quantitative studies, qualitative studies are in general agreement that high-quality walking facilities, safety (traffic- and crime-related) and aesthetics are important for older adults’ PA. However, there remains a need for more qualitative research in this field, particularly to identify micro-level characteristics, which have been hypothesised as being of particular importance to older adults’ PA (Moran et al. 2014, p. 10).

The study by Lockett et al. (2005) included in the review by Moran et al. (2014), exemplifies the extra level of understanding which can be obtained by using qualitative methodologies. The study used photo-voice technique, to identify the environmental barriers to and facilitators of walking for seniors. Safety, specifically traffic related, was
found to be the main consideration when deciding whether and where to walk (Lockett, Willis & Edwards 2005, p. 54). The specific traffic hazards identified by the study were: “being hit or splashed by a car, having insufficient time to traverse intersections, poor visibility in busy intersections and traffic lights located at inconvenient spots on a route” (Lockett, Willis & Edwards 2005, p. 54). Interestingly, pedestrian crossings were identified as a hazard because of creating a false sense of safety. Quality elements were also identified in relation to falls hazards, in particular quality of footpaths (e.g. uneven surfaces) and accessibility of buildings (e.g. weight of the doors). Again this shows that simply the presence of sidewalks and services in a community does not necessarily correspond to an inviting walking environment for seniors. In one example, the authors note that on a map, a 600 metre trip to a shopping mall appears to be well connected by streets and an intersection with traffic lights. From the perspective of an elderly person using a walker, however, walking the short distance involved navigating a number of almost insurmountable barriers

(Lockett, Willis & Edwards 2005, p. 56)

Another qualitative study included in the review by Moran et al. (2014) examined the relationship between environmental factors and transport-related walking behaviour of Flemish older adults (Van Cauwenberg et al. 2012). This study is specifically mentioned here because it is a rare example of using the ‘walk-along-interview’ methodology in environment-PA studies, and one of the methodologies that was used in the present study. The study identified eight types of environmental factors that affected walking for transportation (see Figure 8 below).
The presence and quality of sidewalks was noted by almost all participants as being important, and almost all participants tried to avoid busy streets where possible (Van Cauwenberg et al. 2012, p. 2). Interestingly, the study also revealed some trade-offs between certain factors. For example, one participant preferred to walk on an uneven footpath in order to avoid a busy road (Van Cauwenberg et al. 2012). Therefore, if positive factors (e.g. smooth footpath surface and trees) can be outweighed by a negative factor (e.g. busy road), it suggests importance of considering factors together, rather than separately (Van Cauwenberg et al. 2012).

The presence of others also emerged as a strong theme in the study, for both positive and negative reasons:

> Participants often met friends or neighbours during their walks and said to enjoy these social contacts. Just saying “hello” or having a short chat made their walks more pleasant. On the other hand, places that were too crowded were disliked

(Van Cauwenberg et al. 2012, p. 7).

The presence of people (but not all types of people) was thought to “evoke feelings of safety from crime and provide opportunities for social contacts” (Van Cauwenberg et al. 2012, p. 8). Thus suggesting that local shops and other amenities might not just be
important to have as convenient destinations (Van Cauwenberg et al. 2012), but because of the environment which they create.

Although not examining the neighbourhood environment through the lens of walkability, many of the same obstacles and facilitators are identified in other studies examining the relationship between neighbourhood context and PA of older adults. For example, in their study using the technique of photo-voice, Mahmood et al. (2012) found safety and security to be the most photographed and talked about theme. Elements negatively related to safety and security included: uneven footpaths, obstacles on footpaths, lack of dropped curbs, lack of footpaths, speeding cars, lack of street crossings, graffiti and poor housing (Mahmood et al. 2012). On the other hand, elements such as street-lighting were found to facilitate PA through contributing to a sense of safety (Mahmood et al. 2012). In the synthesis by Yen et al. (2014) three elements emerged as crucial influences on mobility decisions in older adults: aesthetics, land use and connectivity (Yen et al. 2014). Furthermore, the authors concluded that the primary mechanism through which they influenced mobility was through both subjective and objective measures of safety (Yen et al. 2014).

4.3 Walkability & Health: More Than Just Physical Activity?
This chapter has identified a number of limitations with research concerning walkability health to date. Not only have the majority of studies examining the relationship between walkability and PA been undertaken in North America and Australia, but they have also rarely specifically addressed the older population (Bödeker & Reyer 2014). This therefore raises concerns regarding the transferability of results to the case of older Europeans (Bödeker & Reyer 2014). Adapting the concept of walkability for this group, also presents the opportunity to increase the scope of walkability beyond its effects on PA.

As studies by Van Cauwenberg et al. (2012) and Stathi et al. (2012) have highlighted, the walking behaviour of older adults is not only affected by the physical environment, but also by the social environment. This aligns with the discussion in Section 2.3 and the decision to use the term physical-social environment. Some links between walkability, PA and social participation have already been made. For example, Sinnett
et al. (2011) have noted that walking and walking-friendly environments can also facilitate social interaction, which, as the previous chapter has shown, can also have health benefits. More generally, the role of PA for older people in promoting social contacts/involvement has also been recognised (Victorian Department of Health 2012; WHO 2002b; WHO Regional Office for Europe 2012a). The next chapter will explore these ideas further.
Chapter 5: Social Participation and Walkability

5 SOCIAL PARTICIPATION AND WALKABILITY

The previous two chapters have discussed separately the issues of social participation and walkability and how these influence the health of older people. This chapter is concerned with bringing these two concepts together to assess the potential for walkability to support the social participation of older people. The rationale for this is to overcome the almost exclusive focus being placed on the health benefits of PA in the walkability literature. As Glass et al. (1999) have noted, this risks obscuring health benefits associated with other types of activities and non-physiological pathways through which health can be influenced. One repeated suggestion has been to examine how the physical environment (whether through walkability or mobility more broadly) can promote or impede social participation and social interaction (Buffel et al. 2014; Van Cauwenberg et al. 2012; Glass & Balfour 2003; Levasseur et al. 2015). Thus it may be beneficial to consider the concepts of walkability and social participation together rather than separately. As is illustrated in the conceptual framework developed in this chapter, the two concepts can exert reciprocal influences on each other.

5.1 Rationale
A precedent for considering social participation and walkability together can be found in the field of gerontology, in particular Lawton’s ecological theory of ageing (Lawton 1974, 1980; Lawton & Nahemow 1973). This has been taken up by some in the public health field examining the influence of neighbourhoods on health (see for example:
Glass & Balfour 2003; Michael & Yen 2014). Glass and Balfour (2003) clearly highlight the role of social factors in influencing the behaviour of older people in the following paragraph:

> How comfortable does the shopper feel? What is the level of receptivity to the presence of an older person? How safe or threatening is the area? Are there drug deals or other social activities in progress that make her feel ill at ease? Conversely, the social conditions in a neighbourhood may buoy the shopper’s confidence. Perhaps strangers are friendly and offer to help. Do people on the street know the person and inquire as to her welfare? Does she encounter an environment that reinforces her resolve to get to the food store even if she is having a ‘bad day’?  

(Glass & Balfour 2003, p. 321)

However, most public health research on walkability seems to have remained disconnected from this discourse. This is perhaps unsurprising given the hitherto limited number of studies focussing on older people. While Levasseur et al. contend that there is “widespread acceptance of the importance of the neighbourhood for mobility and social participation” (2015, p. 3), these two concepts are not always brought together. Indeed, while acknowledging the existence of some studies in this area, Buffel et al. call for further research that identifies “the ways in which various neighbourhood dimensions can either promote or impede older people’s involvement, potentially taking on board a broader array of indicators of social participation” (2014, p. 657).

While not explicitly considering the links between walkability and social participation, the WHO considers elements of both as important components of age friendly cities (WHO 2007). A guide to age friendly cities was developed by the WHO following an extensive consultation process with older people in 33 cities from across all WHO regions (WHO 2007). Participants were asked to identify the advantages and disadvantages of city living across eight categories (see Figure 9 below) (WHO 2007, p. 1).
‘Outdoor spaces and buildings’ was one element of the consultation process and broadly aligns with elements of walkability discussed in Chapter 4. Key factors of an age friendly city identified under this component include: having a pleasant and clean environment; green spaces; availability of seating and public toilets; good quality of footpaths; dropped curbs; ramps to buildings; safe pedestrian crossings; need for appropriate (customer) service. Related to the latter, the report noted that with “the disappearance of the local shop or convenience store […] older people lose a potential source of social contact and are required to travel further to shop” (WHO 2007, p. 17). Furthermore, access and safety were identified as overriding themes of this topic area (WHO 2007).

Social participation was another of the eight elements investigated. Participants in the consultation process were of the opinion that

the capacity to participate in formal and informal social life depends not only on the offer of activities, but also on having adequate access to transportation and facilities and on getting information about activities

(WHO 2007, p. 38).

The guide therefore recommends that in order to facilitate participation, opportunities should be accessible affordable, and diverse; they should be adequately communicated; held in various locations; and foster community integration (WHO 2007).
More recently, in *Health 2020* the WHO’s Regional Office for Europe notes the importance of supportive environments, or ‘healthy settings’\(^\circ\) in order to support health promotion efforts to encourage people to adopt healthy behaviours (WHO Regional Office for Europe 2013). Aligning with the policy directions and interventions outlined in *Health 2020*, the *Strategy and Action Plan for Healthy Ageing in Europe, 2012-2020* also lists supportive environments as one of its four strategic areas (WHO Regional Office for Europe 2012b). The most relevant aspects of this priority are “environmental factors of the built environment; transportation; support for social participation and social inclusion; security; education; and communication and information” (WHO Regional Office for Europe 2012b, p. 10).

### 5.2 Environmental Factors vs. Individual Factors

Given the links between social participation and health discussed in Chapter 3, it is hypothesised that social participation may act as an additional pathway through which the physical-social environment influences the health of older people. Drawing on the work of Lawton, Levasseur et al. contend that addressing environmental rather than individual factors “may have a greater impact on individual and population mobility and social participation” (2015, p. 2). According to Levasseur et al (2015), neighbourhood environmental factors can either support or obstruct personal capabilities (e.g., mobility) which in turn can influence level of social participation. The WHO has also noted that “for older people, location, including proximity to family members, services and transportation, can mean the difference between positive social interaction and isolation” (2002b, p. 27). This is in agreement with findings from studies on the general population. For example, in their study based in the Netherlands, Van den Berg et al. (2015, n. pag.) found that local social interactions could only be partly explained by personal, mobility and residential characteristics that were included in their study. They proposed that future studies should examine a range of neighbourhood level variables, including walkability (Van den Berg, Arentze & Timmermans 2015).

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\(^\circ\) Healthy settings may be a specific place of education or work, but also refer to a city as a whole (WHO Regional Office for Europe 2013).
5.3 Opportunities for Social Interaction

New Urbanism\(^{17}\) is one lens through which social capital, including social participation specifically, is being linked to walkability. Although the aims of New Urbanism don’t apply to the inner-Berlin district of Moabit, some of its claims might still be relevant for this case study, and therefore will be briefly mentioned here. One of these, is that “walkable neighbourhoods enhance social capital by increasing opportunities for interaction among residents” (Hanibuchi et al. 2012, p. 230). Indeed, in seeking to emulate the design principles of so called ‘traditional’ neighbourhoods, New Urbanism hopes to foster a sense of community “because people will be drawn out to their streets and other public and semi-public spaces, where they can interact with each other and their neighbourhood” (Lund 2002, p. 301). In a subsequent paper, Lund found that people who walked more were “more likely to engage in unplanned interactions with their neighbours” (Lund 2003, p. 427). Conversely, in their review of the literature, Wood et al. concluded that findings to date suggested that “suburbs without attractive walking destinations, footpaths, or a safe and interesting walking environment, are less likely to provide opportunities for informal interaction” (Wood et al. 2008, p. 16).

In their scoping study of literature examining the relationship between neighbourhood attributes and the mobility and social participation of older adults, Levasseur et al. conclude that

\[
\text{to foster mobility and social participation, these interventions must consider Proximity to resources and to recreational facilities, Social support, Transportation, Neighbourhood security, and User friendliness of the walking environment}
\]

(2015, p. 14)

However, this conclusion seems to be based on the number of studies examining these relationships, rather than the quality or strength of the research. As the authors note, an appraisal of the quality of the evidence was not undertaken (Levasseur et al. 2015). One of the papers included in their review identified an association between walking and

\(^{17}\) New Urbanism is an approach to planning and development that emerged in the late 1980s in the United States (Beauregard 2002; CNU n.d.). It is focussed on human-scaled urban design, and draws its inspiration from traditional cities, with particular emphasis on walkable streets, close proximity of shops to residential areas and accessible public spaces (CNU n.d.). The approach came about in opposition to the vast stretches of automobile-dependent suburbs which were being produced in American cities at the time (Beauregard 2002). It should be noted that the approach has also drawn heavy criticism (see for example: Beauregard 2002).
greater participation in organised activities. The authors of the study of French-speaking Canadians aged 58 years and over, observed that

levels of social participation were significantly higher for respondents declaring frequent walking episodes (almost every day), frequent users of public transit (at least once a week), respondents with positive perceptions of the user-friendliness of the walking environment, those with a driver’s license, and those who had a motor vehicle in the household.

(Richard et al. 2009, p. 51)

Similarly, Buffel et al. (2014) found frequent walking episodes to be a positive predictor of social activity. These findings suggest the importance of walkability in facilitating the mobility of older people in order to attend organised activities. In this way it links back to the discussion in Chapter 4 which identified physical environmental barriers and facilitators to walking.

5.3.1 Destinations

Although not focussing on the older population, Leyden (2003) has made a significant contribution to the literature on the association between walkability, social capital and the built environment. One of the findings from his study in Galway, Ireland, was that the more places an individual could walk to was associated with a greater likelihood of being engaged socially (Leyden 2003). In fact, neighbourhood walkability was the second most important predictor for the Social Index, which reflected levels of social engagement (Leyden 2003). Similarly, Van den Berg et al. (2015) found that the presence of certain neighbourhood facilities increased the likelihood of local social interactions.

Allenspach (2013) found that destinations also have the potential to be places of social interaction for older people. Thus local destinations are not just important in terms of the utilitarian purpose they serve and as being reason to be physically active. They also provide opportunity for spontaneous or planned interaction on route or at the destination (Mahmood et al. 2012). Furthermore, they may also provide information about other social activities if there is a bulletin board etc. (Glass & Balfour 2003). A number of studies have tested the association between number of local destinations and social participation of older people. Levasseur et al. (2011) measured proximity based on the perception of the participant and found a positive relationship to exist between the two variables. However, this only explained a small percentage of the variance in social participation, suggesting that other variables are also important. Richard et al. (2009)
also found a positive correlation between the proportion of destinations located within a 5-minute walk and the level of social participation. In a subsequent study, proximity to locations considered conducive to the social participation of older people (public libraries, community centres for older adults, places for PA, and shopping centers) was found to be positively associated with social participation when distances measured objectively, even after controlling for perceived proximity (Richard et al. 2013). In contrast, Buffel et al. (2014) did not find evidence to support this relationship. They suggest that this finding could be explained by the fact that the study did not consider the user-friendliness of the various facilities for older people. This is supported by Bowling and Stafford’s (2007) study, which found evidence of an independent relationship between perceived poor quality of local facilities and low involvement in social activities.

While many formal activities may take place in dedicated buildings, other instances of social participation take place informally and/or in an unplanned fashion. As previously noted, these interactions can occur on the way somewhere. This draws attention to the importance of public spaces in facilitating everyday social interactions (Baum & Palmer 2002; Ziegler 2012). Allenspach recognises the two important purposes of public space

\[
\text{The local public space thus has not only a route function, but also a staying function (as space for social contacts, as an activity space, as a recreational space)}
\]

(Allenspach 2013)

While some characteristics support one or the other function, others, such as the provision of adequate seating can support both in the context of the older population (Allenspach 2013). While recognising the importance of making places conducive for staying as well as for passing through, a vast and growing literature exists on the topic of public spaces and placemaking and it lies beyond the scope of this research to explore this issue in detail.

5.4 Perceptions
As Moran et al. (2014) remind us, the physical environment comprises both objective and perceived characteristics. These can include understandings of distance as well as the quality of the neighbourhood environment. Just as issues of safety and aesthetics are related to walkability, they can also influence social participation. In their study of the
relationship between subjective neighbourhood perceptions and the social participation of older adults in Belgium, Buffel et al., found that

old people’s perceptions of the neighbourhood predict both social activity and formal participation, even when objective city-level characteristics are taken into consideration

(2014, p. 663, emphasis removed)

For example, the authors found perceptions regarding traffic safety to be associated with higher participation levels in social activities (Buffel et al. 2014). In another study, perceptions of low neighbourhood safety (personal and traffic-related), taking into account such issues as graffiti, noise, traffic, and litter, were found to be negatively related to older people’s satisfaction with participation in activities (Hand et al. 2012). Similarly, among the general population, Baum and Palmer (2002, p. 359) found that levels of social and civic participation were higher where people had a positive image of their environment. Given that participation in activities generally takes place outside the home and involves travelling (whether entirely or partly by foot) to a destination, this overlap is not unexpected. However, it is important to recognise that places can be perceived differently by different people. For some, it could be seen as a place for interaction, while for others, it could be perceived as dangerous (Baum & Palmer 2002).

Furthermore, findings are inconsistent across studies, with Bowling and Stafford’s (2007) study not providing evidence of a significant relationship between perceived safety and involvement in social activities.

5.5 Limitations

There are a number of limitations with studies examining walkability, social participation and the health of older people. It is important to draw attention to some of these issues when exploring how the largely separate discourses on walkability and social participation could be brought together. Again, the overwhelming majority of studies were carried out in northern America (Levasseur et al. 2015). In addition, differences in terminology continue to present a significant problem, particularly in relation to enabling comparisons between studies. Furthermore, not all studies control for possible confounding factors. The importance of this, specifically in regard to the potential issue of self-selection into neighbourhoods with specific characteristics has been widely noted (Carpiano 2007, p. 200; Leyden 2003; Wood & Giles-Corti 2008).
Establishing direction of causality is a significant difficulty. According to Kawachi and Berkman, this is particularly problematic for social behaviours, including social participation, as most social behaviours “are rooted in the individual’s choices and preferences, and hence endogenous in any equation linking social capital to health outcomes” (2014, p. 308). With specific regard to the relationship between social participation and health, Kawachi and Berkman posit that alternative explanations of the apparent correlation could be:

(1) healthy people are more likely to join groups, and/or (2) the association is confounded by unobserved heterogeneity, for example, temperament or personality or some other characteristic that acts as a common prior cause of social participation and later health

(Kawachi & Berkman 2014, pp. 308–9)

Similarly, Buffel et al. (2014) found levels of social activity “to be significantly higher among younger participants, and among those who reported better health and higher levels of education and income” (2014, p. 666). Conversely, Carpiano (2007) recognises the restrictions poor health may place on individuals from engaging with others in the neighbourhood. It is unsurprising therefore, that research shows that socio-demographic as well as individual factors (e.g. health status) affect the level of social participation among older adults (Richard et al. 2009). For example, in their qualitative study of older women in a socially disadvantaged neighbourhood in the UK, Boneham and Sixsmith (2006) found that most of the participants were not actively involved in the community due to mobility issues.

It is also possible that rather than health status determining the level of social participation, social participation provides a reason to be physically active, and thus positively influences health status. The WHO has noted that

taking part in civic activities, as well as in leisure and entertainment activities, can motivate older people to stay mobile and socially connected. Being involved in activities outside the home encourages older people to walk more and exercise, and can contribute to improved intrinsic capacity.

(WHO 2015c, pp. 183–184)

Similarly, Van Cauwenberg et al. (2014) found that participation in clubs and associations as well as volunteering was significantly associated with daily walking for transportation because this “provides older adults with another relevant destination to walk to, in addition to the destinations needed to serve their daily needs” (Van Cauwenberg et al. 2014, p. 28).
Criticism has also been levelled at the overall approach taken to examining walkability. Andrews et al. are especially critical of how challenges faced by disabled people have been reduced to a problem of access, without taking into account “the significant embodied experiences and emotions of being ‘out of place’ in disabling city environments shaped by economic, political and cultural forces” (2012, p. 1928).

According to the authors, this has led to a focus on technical requirements for access rather than emotions. Although writing about disabled people, their criticisms could just as easily apply to the elderly, as illustrated by the following statement:

Walking (in the broadest sense) is so much more than physical movement from A to B, for biophysical benefits; for many disabled and chronically ill people it is an intensely embodied and emotional experience, involving bodily strain and effort, tiredness and the need to rest, and self-consciousness of moving (perhaps differently) through public space; at the same time it can boost self-confidence and esteem, and build a sense of belonging and right to being in public spaces

(Andrews et al. 2012, pp. 1928–9, based on work by Hall 2010)

This statement clearly indicates the possibility, or even necessity, to expand the concept of walkability even further than explored in this thesis.

5.6 Conceptual Model

The evidence presented in this chapter (as well as chapters 3 and 4) has demonstrated that there is a complex relationship between the physical-social environment and social participation. In attempting to connect the different aspects of this relationship, the conceptual model developed by Yen et al. (2014) was used as a guide (see Figure 10 below). Their model is based on the ecological model and WHO’s International Classification of Functioning (ICF). It aligns with how I have approached this study and is supported by the literature review in this thesis. Notably, it recognises both individual and environmental factors as playing an important role, as identified by the literature. For example, Buffel et al. (2014) found that individual characteristics were the strongest predictor of social activity, while formal participation was explained more by neighbourhood perceptions.
Figure 10: Contextual influences that promote mobility in older adults
(Yen et al. 2014)

Figure 11 below shows my adaptation of this conceptual model, which will be tested, in the empirical part of the study. In addition to the inclusion of health status, an important modification to Yen et al’s (2014) conceptual model is the bi-directional arrow between the activity (walking) and participation. This is not only because of the problems of determining direction of causality (as discussed in the previous section), but because it is also possible that relationships are bidirectional, and mutually reinforcing (Van Cauwenberg et al. 2014). Furthermore, it is likely that the relationship between walkability and participation is not only direct, but also indirect, working through the factor of health status. As Levasseur et al. (2011) contend:

Walking to resources increases or maintains older adults’ physical capacities and health, which might in turn increase the likelihood of social participation

(2011, p. 6)
Figure 11: Conceptual model: relationship between walkability, social participation and health in older adults
6 METHODOLOGY

The empirical part of this study is qualitative in nature and is based on a case study situated in Moabit, an inner-district of Berlin, Germany. The research comprised three main components: a survey, Walking-By-Interviews (WBI), and a Sozialraumanalyse. In addition data was collected from a Focus Group Discussion (FGD) and field notes. Results were triangulated to provide a more comprehensive understanding of the topic. This chapter will begin by explaining in further detail the rationale for choosing qualitative methods. Following this, the case study will be described before concluding the chapter with a description of the specific methods chosen for data collection and analysis.

6.1 Why Qualitative Methods?
The main reason for choosing qualitative rather than quantitative methods is because the type of information yielded by qualitative studies was deemed most appropriate to answer the research questions. Research on walkability to date has been dominated by quantitative approaches, however, results regarding the environmental correlates of older people’s PA have been inconsistent across studies (Moran et al. 2014). Qualitative studies therefore have an important role to play in complementing quantitative research by “providing insight into how and why the environment influences participants’ PA behaviours” (Moran et al. 2014, p. 1). They might also be able to identify additional environmental factors and shed light on differences between objective and perceived measures (Van Cauwenberg et al. 2012).
In contrast with quantitative methods, qualitative methods do not generate results that can be generalised (Patton 2002). However, qualitative studies are useful in increasing the depth of understanding through the production of detailed information (Patton 2002, p. 14). They also lend themselves to be able to more freely explore different social processes and mechanisms (Whitley 2008), and question assumed relationships of causality (Andrews et al. 2012). This study sets out to identify limitations with the current definition of walkability as well as to explore how the environmental factors affecting social participation might be included into the concept of walkability. Therefore, freedom to explore different ideas was deemed more important than the ability to generalise results. Given that this is a new area of research, a greater focus was placed on understanding rather than measuring, in order to provide guidance on a way forward for future research.

In addition, although it would have been theoretically possible to undertake a mix-method study using a combination of qualitative and quantitative methods, this was considered to be too resource intensive. This is not to say that qualitative methods are easier or quicker, on the contrary, they can often be a lot more time consuming. However, in order for results of quantitative studies to be valid, a certain sample size must be obtained. Given that a large team was not conducting the study, difficulties in reaching the study population and the reluctance of older Germans to divulge information to strangers, it was decided that a quantitative approach was not feasible.

6.2 Description of Case Study
This research is linked to the current project of the Institut für Gerontologische Forschung e.V. (IGF) (Institute for Gerontological Research): “Selbstbestimmt Wohnen und Teilhaben im Quartier” (Self-determined living and participation in the neighbourhood). This research was commissioned by the GKV-Spitzenverband, which is the central organisation of statutory health insurance companies in Germany. This project is being undertaken in Moabit-Ost, and it was the intention for the present research to align with this study area. However, the difficulty with recruiting participants was noted early on and it was decided to expand the study area to include all of Moabit.
6.2.1 Level of Analysis

As previously discussed, individual factors can only account for some of the variation in health outcomes between people. An acknowledgement of the importance of the physical-social environment therefore underpins this study. For this reason, it is equally important that the level of analysis is not too large (e.g. city or state level), as it is that it is not too small (e.g. focus on individuals). The neighbourhood has been frequently chosen as the level of analysis by studies examining walkability and social capital.

The neighbourhood environment is of particular importance in the lives of older people. Age-related conditions may cause physical limitations, retirement, relocation of children, and deaths of family and close friends, thus contributing to the shrinkage of social space and the increased amount of time spent in the local neighbourhood (Van den Berg, Arentze & Timmermans 2015; Cagney & Wen 2008; Van Cauwenberg et al. 2014; Falk et al. 2011; Van Holle et al. 2015; Lawton 1980; Levasseur et al. 2015; Murayama et al. 2015; Weijs-Perrée et al. 2015). Furthermore, for many older people, the shrinkage of social space to the neighbourhood level is a result of limited financial resources, which in turn restricts mobility (Falk et al. 2011; Ziegler 2012).

There are a number of challenges that come with conducting analysis at the neighbourhood level. Lawton (1980) notes the difficulty in defining the term and the fact that interpretations vary depending on individual circumstances. Because of this, there are likely to be differences between official boundaries of a neighbourhood and residents perceptions of a neighbourhood (usually smaller) (Carpiano 2009). It is also important to note that in English, the term ‘neighbourhood’ is used as both a social and planning term, unlike in German, where it refers predominantly to social structures of residents (see for example: Falk et al. 2011). In addition to the definitional problem, the difficulties associated with finding a sufficient number of eligible and willing participants living in a specific neighbourhood within Moabit was deemed too resource intensive and not essential for this study. To compensate, questions were specifically related to the neighbourhoods of the individual participants.
6.2.2 Study Participants

While quantitative studies select participants in order that they are statistically representative of the population under study, qualitative studies generally use purposive sampling (Patton 2002; Ulin, Robinson & Tolley 2012). As the emphasis of qualitative research is on in-depth understanding, purposive sampling is undertaken to select information-rich cases, in other words, those from which it is anticipated to yield information on the topic(s) of interest (Patton 2002). Within the framework of purposive sampling there are a number of different strategies, which are defined and classified differently by different authors (compare for example: Patton 2002; Ulin, Robinson & Tolley 2012). A combination of strategies was used in the present study.

This study began by defining the participant eligibility criteria as follows:

1. Aged 65 years or over
2. Resident of Moabit
3. Living independently in their own home (i.e. not in an aged-care facility)
4. German

The first three criteria were determined by asking the person directly. The fourth criteria was a judgement by the researcher and based primarily on language.\(^{18}\) The sampling strategy can be described as a combination between intensity and homogenous sampling (as per: Patton 2002; Ulin, Robinson & Tolley 2012). The eligibility criteria ensured a degree of homogeneity between participants.

Despite being strongly criticised (Patton 2002; Ulin, Robinson & Tolley 2012), elements of convenience sampling were necessary to include in the sampling strategy for reasons of practicality. During the test-phase of the survey component, it became clear that older Germans were rarely willing to engage in conversation, let alone to agree to partake in a survey when approached by a stranger in public places (e.g. parks, squares, cafes). This echoes the experiences of Falk et al. (2011), who noted that in

\(^{18}\) Note: there were no potential participants who were excluded based on the fourth criterion. The reason non-Germans were not considered for this study is because additional cultural factors would have needed to have been taken into account, which is beyond the scope of this study, but an important area for future research.
order to find study participants, it is important to invest time and to engage in activity with potential participants. They found only a handful of exceptions where it was possible to recruit someone through a chance encounter (Falk et al. 2011). After a positive experience recruiting participants through a church-based seniors group in the test-phase, it was decided to search for participants through church- and community-based seniors groups in Moabit.

It was clearly more convenient and time efficient to gain access to older people through an organised activity than by attempting to engage with them in public spaces. Van Cauwenberg et al. (2012) also used purposeful convenience sampling in their study which employed walk-along interviews. Patton’s criticism of convenience sampling because the ‘information-poor’ end up being sampled does not necessarily hold true. In this study there could be no case of an ‘information-poor’ person. The perceptions and opinions of all people meeting the eligibility criteria for this study are equally important. Of course, some people are willing to talk more than others, however, this cannot be determined in advance, nor does it mean that their opinions are any more important than another’s.

There are no rules for the calculation of sample size because this is a qualitative study (Patton 2002). Ideally, sampling occurs to the point of redundancy, or theoretical saturation (Guest, Bunce & Johnson 2006; Patton 2002), however, this requires unlimited time and resources. In their literature review Guest et al. (2006) found that there were no clear guidelines regarding the size of purposive samples. Recognising that in reality sample size needs to be determined before field work begins, Guest et al. (2006) undertook a study, which documented the degree of data saturation over the course of their study, with the aim to provide a basis from which to determine size of purposive samples. In their study, they found that data saturation\(^{19}\) was almost complete after twelve interviews (Guest, Bunce & Johnson 2006). While this provides a guide, the authors note a number of potential problems concerning the extent to which their findings can be generalised, for example nature of study questions, composition of the

\(^{19}\) They defined data saturation as being “the point in data collection and analysis when new information produces little or no change to the codebook” (Guest, Bunce & Johnson 2006, p. 65).
sample and purpose of study (Guest, Bunce & Johnson 2006). Specifically, they note that it would be expected that the greater the degree of homogeneity among the study population, the quicker it would be expected to reach saturation (Guest, Bunce & Johnson 2006).

Based on the above-mentioned findings, a target of 12 participants for the survey was set. However, if new themes still seemed to be emerging, additional participants for the survey would be sought. Regarding the number of participants chosen for the WBIs, two-to-three people were considered sufficient, given resource constraints, in order to support or refute findings from the survey. Recruitment for the WBIs proved difficult, firstly in terms of identifying appropriate people, and secondly in getting them to agree to go for a walk with strangers. Two willing participants were found to partake in the WBI, however, one of them decided that she did not want to go for a walk, and instead stayed in the café where we had met for a chat. The other participant coincidentally also completed the survey the day after the WBI as she was at the seniors’ group where I was looking for participants.

6.3 Data Collection

Three main interlinked data collection methods were used in this study in order that results could be triangulated. Triangulation is highly valued and is considered to contribute to the strength of a study (Patton 2002). This is because it makes the study less vulnerable to the limitations of a single approach (e.g. loaded interview questions) (Patton 2002). Thus, the intention is not that the results from different approaches corroborate. In fact, this can be useful in highlighting different perspectives (Ulin, Robinson & Tolley 2012). Another reason for using a variety of methods was in order to capture both perceptions as well as objective measures of walkability. Gebel et al. (2011) have identified a number of studies which showed discrepancies between the two. Ethics approval was not required for this study. All participants were assured of anonymity and that data collected would remain confidential. Furthermore, participants were told they did not have to answer every question, for example, if they felt it was too personal.
6.3.1 Survey
The qualitative survey, is rarely acknowledged in textbooks on general or qualitative methodology (Jansen 2010, p. 3). This is despite the fact that it is being used on the ground as part of qualitative research. For example, in their qualitative study examining the relationship between well-being and new technologies among university students, a survey containing open-ended questions was used in the first phase of the study (Salvagno et al. 2015). Results from this phase were used to shape the semi-structured interview questions of the second phase (Salvagno et al. 2015).

In contrast to the quantitative survey, the qualitative survey is concerned with determining diversity (rather than distribution) within a specific population (Jansen 2010). Furthermore, Jansen (2010) contends it is possible to have both open (inductive) and pre-structured (deductive) qualitative surveys. In so doing, Jansen does not equate qualitative research with induction as other researchers have done (Jansen 2010). This is because he doesn’t differentiate between qualitative and quantitative studies based on the type of data or the collection method, but rather on its analysis (Jansen 2010). If it is concerned with diversity, then it is qualitative research, even if the results are expressed in numbers (Jansen 2010). Therefore, although in attempting to define the ‘qualitative survey’ Jansen (2010) refers specifically to the semi-structured interview, this term could also be applied to a paper-based survey.

It was decided to use a self-administered paper-based survey rather than conducting in-depth interviews. This is because, given the explorative nature of this study, it was felt necessary to identify and establish key themes as an initial step. There was concern that if in-depth interviews were conducted as a first step, they may have been ill- or poorly-informed and therefore only of limited use. Using in-depth interviews in a subsequent stage was considered, however, was not pursued largely because of practical considerations, specifically time restraints and the fact that German is not my native language. Given the short time frame during which the Masters thesis could be conducted, it was not considered feasible to conduct in-depth interviews in addition to the survey, particularly given the time required for transcription. Instead, it was deemed more feasible, and of equal or greater value, to conduct WBIs in conjunction with the IGF project (see sub-section 6.3.2).
The study survey (see Appendix 2) includes a mix of open (inductive) and closed (deductive) questions. While recognising that pre-determining response categories can limit the points of view expressed by participants (Patton 2002), as part of this study is concerned with identifying the limitations with the concept of walkability, it was important to ensure that opinions on specific elements were elicited. It was thought that if a specific characteristic of the physical environment (e.g. presence of street lights) was not listed, then participants might not think to comment on it.

Development of questions was influenced by a number of previous studies (Van Cauwenberg et al. 2011, 2014; these included: Hanibuchi et al. 2012; Leyden 2003; Rogers et al. 2011). For example, to account for possible issues arising from self-selection, open ended questions regarding the reasons why people chose to live in the area they currently resided in were included, following in the steps of Rogers et al. (2011). However, there were also some differences with previous studies. While a number of studies and walkability assessment tools were interested in the number of destinations which a participant could walk to (see for example: Bias et al. 2010; Van Cauwenberg et al. 2014; Leyden 2003; Rogers et al. 2011), this study was more interested in the destinations that participants actually walked to. Furthermore, a number of studies included questions about contact with neighbours (see for example: Van Cauwenberg et al. 2014). In Moabit, apartment buildings are the primary form of residential dwellings, therefore neighbours are likely to be considered as those people who live in the same building. Given the focus of this study on walkability, and by implication activities that occur outside the home, the inclusion of similar questions was not deemed appropriate.

Before implementation, the survey was pre-tested on four people aged 65 years and older in Neukölln. Neukölln was chosen as the site for pre-testing because it has a similar socio-demographic profile to Moabit and was more convenient to reach than Moabit. There were a number of reasons for pre-testing, including ensuring clarity of questions, not just in terms of phrasing but also in terms of specific vocabulary. This was a very useful process and resulted in a number of changes being made to the survey. For example, the term ‘Quartier’ was understood to be the individual’s dwelling, therefore, ‘Kiez’ (the Berlin term for neighbourhood) was included in
parenthesis behind any mention of the word ‘Quartier’. There was also misunderstanding regarding the rating of how big a role certain elements of the built environment played in an individual’s decision to go by foot or not. Some people interpreted the 1-5 ranking scale as per the German school system, where 1 is the highest grade, and 5 is the worst, although in this situation the reverse was intended. Furthermore, some interpreted the question as their own ranking of the neighbourhood in which they lived. As a result, short descriptions replaced the ranking scale in the final version.

6.3.2 Walking-By Interview

The Walking-By Interview (WBI), also referred to as ‘Walk-Along’ or ‘Go-Along’ Interview, is a novel way to explore objective and subjective elements of the physical-social environment. As the name suggests, participants are accompanied by a researcher on a walk, generally in their neighbourhood (Carpiano 2009; Van Cauwenberg et al. 2012). The strength of this method lies in its potential to capture rich information by virtue of being “in the moment”, rather than relying on the recall of participants (Van Cauwenberg et al. 2012). In other words,

through asking questions and observing, the researcher is able to examine the informant’s experiences, interpretations, and practices within this environment

(Carpiano 2009, p. 264)

Unlike traditional interviews, the WBI is able to capture context-sensitive reactions of both the interviewer and interviewee by virtue of simultaneous interaction between participant, researcher and place (Van Cauwenberg et al. 2012). In so doing, they create the possibility to identify environmental factors that have not been identified in previous studies (Van Cauwenberg et al. 2012). Similarly, in their study which compared walking and sedentary interviews, Evans and Jones (2011) found that walking interviewees were more likely “to talk about their relation to place with less prompting by the interviewer” (2011, p. 856).

The value of using spatial qualitative methods, such as the WBI, is considered particularly high in the case of older people, given their interactions with the physical

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20 The term ‘Go-Along Interview’ can be used with respect to walking-based interviews, but may also include other transport modes (Carpiano 2009).
environment are uniquely shaped by age-related changes in functional capacity, sight, hearing etc. (Moran et al. 2014). Furthermore, Moran et al. (2014) advocate combination of spatial methods with other qualitative methods in order to gain greater depth in understanding. In their review of qualitative studies examining the relationship between the physical environment and PA in older adults, they found that there was a difference in the reporting frequency of themes and sub-themes depending on whether spatial methods or indoor interviews were used. For example, separation between pedestrians and other non-motorised modes of transport, as well as weather-related sidewalk maintenance were reported more frequently by spatial methods (Moran et al. 2014).

As with other qualitative methods, there are different possible formats for the WBI. In this study, the route was determined by the interviewee, but they were asked for the route to be a typical walk – e.g. to a local café, supermarket etc. The interviewee also set the pace of the walk and able to stop for a rest as required. As this part of the study was directly linked to the project being undertaken by the IGF, Sabine Dummert of the IGF was the chief researcher, with the primary responsibility for asking questions and transcribing the audio. I was primarily responsible for marking the route on a map, including noting where particular comments were made, as well as for recording observations about the physical environment (e.g. difficulty crossing a street due to absence of dropped curbs).

With respect to the questions asked during the WBI, a semi-structured format was used, which included a mix of pre-determined and ad hoc questions.\(^{21}\) This allowed important themes relevant to the research to be covered as well as the ability to respond to the situation at hand. The interview guide (see Appendix 3) was prepared by Sabine Dummert. While all topics were covered, there was no set order, thereby allowing us to choose questions appropriate to the current environment and/or observations made by the interviewee. The first WBI was conducted before implementation of the survey had

\(^{21}\) It should also be noted that during both WBIs and the FGD, participants were assisted in completing a short questionnaire developed by the IGF specifically for their project. With the exception of personal data (e.g. age, marital status, health status), information collected in the questionnaire was not included in the data analyses for this study except where it was captured in the audio transcript.
begun and the second was conducted after all surveys had been completed. Thus, in the second WBI it was possible to include questions based on preliminary analysis of the survey findings. Ideally, both WBIs would have been conducted post-survey completion, however, given the difficulty in locating willing participants and the fast approaching winter, it was necessary to make the most of opportunities as they arose.

6.3.3 Social Area Analysis/Sozialraumanalyse

Social area analysis, or Sozialraumanalyse in German, is the third methodological component of this study. A quick search for literature on this topic reveals that in the English-speaking world, this area of research received most attention between the late 1950s and the early 1980s. However, Sozialraumanalyse is still very prominent in German-language spatial- and social research today. Although this study is written in English, because it is set in Germany and undertaken as part of a degree at a German university, it was considered an acceptable methodology for this research. In this study it has been adapted as a method to structure direct observations of features of the built environment as well as the collection of key data pertaining to the study area.

The concept of social area analysis emerged in the United States in the 1950s. The work of Shevky and colleagues, in particularly his work with Bell (1955) was paramount in determining the development of the concept (Brindley & Raine 1979; Jensen 1984; Zehner 2004). They identified social rank, urbanisation and segregation as being the three constructs of social differentiation (Brindley & Raine 1979; Jensen 1984). What differentiated social area analysis from traditional research was its focus on differences between areas or groups, rather than between individuals (Struening et al. 1973). In this way it is similar to the social determinants approach to public health research. However, according to Brindley and Raine, social area analysis came “to denote a method based

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22 As will be discussed in this section, from the 1980s there was a change in how social area analysis/sozialraumanalyse was undertaken, including a broadening of scope. In the English-speaking world it is likely that this diversification was captured under other disciplines, such as human or social geography.

23 The work of Shevky and colleagues has also been given prominence in German literature (see for example 1961 text by Shevky and Bell reproduced in: eds Riege & Schubert 2005).
on multivariate statistical techniques … employed in the analysis of (mostly) urban areas” (Brindley & Raine 1979, p. 273)\textsuperscript{24}.

Since the mid 1990s, Sozialraumanalyse has developed a more qualitative focus and diversified methodology, thereby increasingly differentiating itself from the quantitative social area analysis (Zehner 2004). Thus Riege and Schubert (2005) differentiate between two typologies of Sozialraumanalyse. The first aligns with the classical model of social area analysis, which uses quantitative (socio-economic) indicators to compare areas at the city-level. The second typology is concerned with examining the structure and the quality of a specific municipal area using both qualitative and quantitative data (Riege & Schubert 2005). Importantly, this analysis occurs at multiple levels, and links the structural level with the individual level (Riege & Schubert 2005, p. 44).

Furthermore, while the first is focussed on the social structure, the second is concerned with behaviour and action within the space (Riege & Schubert 2005). Therefore, the second typology is particularly suited to examining walking and social participation behaviour within a neighbourhood. For the remainder of this text, the term Sozialraumanalyse will refer to this second typology.

Riege and Schubert note that Sozialraumanalyse is characterised by the following four levels of analysis: (1) spatial demarcation and definition; (2) structural profile; (3) description of current problems, resources, potentials; and (4) empirical analysis of living and action spaces (2005, p. 46). As Sozialraumanalyse comprises only one component of this study’s methodology, it was not designed to be as in-depth as if it were the single study methodology. Data for the first level of analysis was collected by looking at maps of the area and through taking several walks through Moabit. For the second level, publicly available statistics were consulted to find relevant socio-economic data. The third level, while important, was considered too resource intensive and beyond the scope of this study. Finally, the fourth level of analysis was conducted through a variety of empirical methods and related specifically to the research questions.

\textsuperscript{24} See work by Brindley and Raine (1979) for a critical discussion of the merits and limitations of social area analysis.
Taking walks through Moabit comprised an important component of the empirical component of the *Sozialraumanalyse*. A final walk through was undertaken after the survey and WBI had been conducted and analysed. This was in order that findings based primarily on the perceptions of the participants could be compared with “objective” findings based on observation by the researcher. Another reason was so that the analysis could concentrate on the areas where the majority of the participants lived and/or carried out their daily activities. Another element was incorporated into Question 20 of the survey. Participants were asked to mark certain locations on a map, in a similar fashion to the ‘pin method’ (*Nadelmethode*) which was used in a FGD organised by the IGF (see next section). A benefit of this method, is that it enables exploration of the social area of individuals with minimal effort (Franzen 2005). Franzen (2005) also used this method to explore the social environment of seniors in Köln-Kalk.

6.3.4 Focus Group Discussion and Field Notes

As previously noted this study has three primary methods: qualitative survey, WBI and *Sozialraumanalyse*. However, according to Sandelowski, as long as qualitative researchers “are ‘in the field’, they are obliged to consider as data whatever they observe in the field” (2000, p. 336). Thus qualitative research is not subject to the same rigidities of quantitative research. Therefore, field notes and the FGD can also count as methods of this study.

Field notes were kept concerning survey implementation. These recorded not only the location and activity where participants were found, but more importantly, themes that emerged during the conversation that frequently accompanied and followed the filling-out of the survey. Furthermore, during the data-collection phase, the IGF conducted a FGD as part of their study. I was invited to attend as an observer and to assist with logistics. As some of the topics discussed were relevant to my research, the transcript of the FGD as well as my notes from that session were also included in my data collection.

6.4 Data Analysis

Unlike quantitative studies, data collection and data analysis are not distinct research phases in qualitative studies, (Sandelowski 2000; Ulin, Robinson & Tolley 2012) and are instead part of an iterative approach (Jansen 2010). This is because qualitative research allows for the research question(s) and conceptual framework to be adjusted
during the course of the study (Ulin, Robinson & Tolley 2012). Thus, as already noted, preliminary data analysis had already begun prior to the final WBI being conducted, which influenced the questions asked. Furthermore, the final walk for the Sozialraumanalyse was conducted after both the survey and WBIs had been undertaken and analysed.

Data analysis was based on the method of qualitative description as defined by Sandelowski (2000). One distinguishing feature of this methodology is its ‘low-inference descriptions’ which increases the likelihood of different researchers agreeing on the basic facts of a case (Sandelowski 2000). However, of course, what a researcher decides to include or exclude from the description will be a personal choice (Sandelowski 2000) and findings will not necessarily be replicable (Sandelowski 2000; Sandelowski & Leeman 2012). Thus, as with all descriptions basic qualitative description is interpretative, however, it is

> not highly interpretive in the sense that a researcher deliberately chooses to describe an event in terms of a conceptual, philosophical, or other highly abstract framework or system. The description in qualitative descriptive studies entails the presentation of the facts of the case in everyday language.

(Sandelowski 2000, p. 336)

In other words, interpretation is not undertaken through the lens of a specific framework (e.g. phenomenology).

However, this study differs from the specific data analysis approach advocated by Sandelowski (2000). She considered qualitative content analysis as the appropriate data analysis strategy for qualitative descriptive studies. In this methodology, codes are derived from the data during the analysis, rather than being pre-determined (Sandelowski 2000, p. 338). As the research question demands consideration of the current walkability framework, it was considered important to interpret the data with reference to the key themes that had emerged in the literature. Thus, the three aims of interpretation according to Patton were used to inform the design of the data analysis

> (1) Confirm what we know that is supported by data, (2) disabuse us of misconceptions, and (3) illuminate important things that we didn’t know but should know

(Patton 2002, p. 480)

It is important to note here that the data collected from the surveys and WBIs was in German. Data analysis therefore occurred in German (although based on concepts...
largely established in the English-speaking world) and translation into English was only done when a direct quote was included in the paper. I did all the translating myself.

6.4.1 Survey Analysis
A survey form was created in Google Forms to emulate the paper-based survey (see Appendix 2). Responses from each survey were then entered into the form, even where some questions were incomplete or skipped entirely. This can be considered as the first stage of data analysis.

It was during this phase that a number of issues with certain questions were identified. For example, question 8 should have listed all possible options for transport (i.e. walking, biking, public transport, taxi, other) in order to ensure consistency. Some participants noted if they biked rather than walked, however, others, who identified elsewhere as being bike-riders, ticked that they accessed all destinations by foot. This would also have avoided the ambiguity regarding whether blank meant they never went to a specific destination, or they took another transport mode. Faced with the choice of grouping bike riders with walkers or non-walkers, it was decided that the former was more appropriate. This is because: (1) bike riding is another form of non-motorised transportation which also has health benefits from PA; (2) while less likely to do so than walkers, bike riders are also able to stop and interact if they see someone they know (Weijs-Perrée et al. 2015); and (3) because it would be more unrepresentative to characterise them as people who didn’t access local destinations under their own steam.

Responses were analysed using a combination of the automatic summary data output by Google Forms, and by exploring different ways of presenting the data in Excel. Sandelowski (2001) highlights the importance and usefulness of playing with numbers to explore different patterns and identify connections. Google Forms automatically calculates the number and percentage of responses to each multiple choice option of a

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25 Google Forms is a free web-based tool available at: https://www.google.com/forms/about/
26 Weijs-Perrée et al., (2015) found that frequency of cycling was positively associated with the number of social interactions. This is probably applicable to the population group in this study and the types of trips they make - generally short and in their local neighbourhood, rather than being long commutes to work under time pressure.
given question. Using both this data and raw data, it was then possible to explore different relationships with the data and look for any patterns or anomalies. This was done for both open and closed questions.

Despite being a qualitative study, numbers still play an important role, albeit a different one than in quantitative studies (Sandelowski 2001). In qualitative studies, numbers are used “to establish the significance of a research problem, to document what is known about a problem, and to describe a sample” (Sandelowski 2001, p. 231). In particular, the importance of counting is considered an integral element of data analysis, especially in regard to identifying patterns as well as irregularities (Sandelowski 2000, 2001). It was decided to include both verbal and numerical counting in the study. In the text, verbal counting is used. This means that numbers are implied without being stated, for example through the use of words such as ‘a few’, ‘some’, many’ and ‘most’ (Sandelowski 2001, p. 236). Table 5 below shows what verbal counting terms are used in this study and how they are defined (in terms of number of participants). This was loosely based on work by Van Cauwenberg et al. (2012) as well as Sandelowski (2001). Furthermore, percentages were avoided as per Sandelowski (2001) who considers they should be avoided where there are less than 25 cases.

<table>
<thead>
<tr>
<th>No. Participants</th>
<th>Verbal Counting Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>One Participant</td>
</tr>
<tr>
<td>2</td>
<td>A few</td>
</tr>
<tr>
<td>3</td>
<td>Some</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>A lot of/many</td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Most</td>
</tr>
<tr>
<td>12</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Explanation of verbal counting terms

As per Sandelowski (2001), numerical counting was also included so that readers could see exactly what was meant by the verbal counting term. For most questions, a table is presented showing the number of participants responding in a certain way to a particular question. It is important to note that the numbers do not always equal the total number
of participants (13) as a participant may have skipped a question and/or another participant may have had multiple responses to a single question.

Given that the majority of responses to open questions were very short and generally comprised of individual words or incomplete sentences, it was not deemed necessary to develop a coding framework. For each question, responses were read a number of times, and different possible ways of classifying the data, according to topics and themes, were explored. Where possible, themes were related back to those identified in the literature review. In some instances, the absence of certain themes was also noteworthy.

6.4.2 Walking-By-Interview Analysis
The WBI s were transcribed by Sabine Dummert from the IGF. I undertook analysis of the transcript after the survey data had been analysed. This sequence was a result of practical considerations, as the transcription was a lengthy process. However, as a result, the content analysis of the WBI s was largely based on the themes and topics identified in the survey as well as the literature. For both the survey and the WBI analysis a combination of inductive and deductive analysis (as per Patton 2002) was used. In other words, the analysis was specifically focused on identifying themes and topics that matched those identified in the literature review, but at the same time was open to identifying other patterns, which emerged from the data and didn’t fit into the existing framework.

Similarly, the transcript of the FGD was also analysed with respect to themes and topics from the literature and those that emerged in the survey. One limitation associated with the data analysis of the WBI s and FGD is that not being a native German speaker, it is possible that I missed some of the language nuances, for example additional meanings implied through the choice of words. However, given that I was present during the data collection, there were also a lot of visual cues that helped reinforce the meaning of the language.

6.4.3 Sozialraumanalyse Analysis
As noted in Section 3.3, the Sozialraumanalyse was based on the framework presented by Riege and Schubert (2005). It was undertaken in order to provide context for the
findings from the survey and WBI, as well as to compare participant perceptions with researcher observations. Thus, it was not the aim of the *Sozialraumanalyse* to specifically assess the walkability of Moabit (or LOR 01022204) against the traditional measures of, density, diversity and design. To do so would have been counterintuitive, given the limitations of the current concept that were already identified in the literature review.

Key statistics, collected through internet research, were compiled so as to provide an overview of the demographic and socio-economic situation of Moabit and its residents. The empirical component, collected data on commercial areas, supermarkets, pharmacies, public transport, churches, footpath quality, street crossings and green spaces within LOR 01022204. Selection of these characteristics was based on recurring themes which had emerged during survey collection as well as the WBIs.
The presentation of results and analysis of this study has been divided into two parts. The first will provide an overview of the key characteristics of the study participants and a detailed description of the study area. The second will draw out the key themes identified in the survey results, specifically as they relate to the walking behaviour, social participation and neighbourhood perceptions of older people.

The aim of this chapter is to provide the basis for interpreting the findings presented in Chapter 0. It will also assist in determining the applicability of these findings to other settings. Given that the survey was the primary data collection method, this chapter will focus on the characteristics of the survey participants. The circumstances under which the WBIs and FGD were conducted will also be briefly discussed. Subsequently, the results from the Sozialraumanalyse will be presented according to Riege and Schubert’s (2005) structure discussed in Chapter 6.
7.1 Study Participants

17 different people participated in this study: 13 people completed the qualitative survey; the WBIs were conducted with two participants, one of whom also participated in the survey; and the FGD comprised three participants. Table 6 below provides an overview of the individual characteristics of the participants and lists the planning area (LOR) in which they reside. Pseudonyms have been used to protect the identity of participants.

<table>
<thead>
<tr>
<th>Nr.</th>
<th>M/F</th>
<th>Name(a)</th>
<th>Age</th>
<th>Health</th>
<th>Walking Aids(b)</th>
<th>LOR</th>
<th>Marital Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M</td>
<td>Herr Müller</td>
<td>65-69</td>
<td>good</td>
<td>none</td>
<td>01022102</td>
<td>single</td>
</tr>
<tr>
<td>2</td>
<td>F</td>
<td>Frau Schmidt</td>
<td>70-74</td>
<td>alright</td>
<td>walker</td>
<td>01022204</td>
<td>widowed</td>
</tr>
<tr>
<td>3</td>
<td>F</td>
<td>Frau Weber</td>
<td>over 80</td>
<td>alright</td>
<td>none</td>
<td>01022204</td>
<td>widowed</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>Herr Schulz</td>
<td>65-69</td>
<td>good</td>
<td>none</td>
<td>01022206</td>
<td>married</td>
</tr>
<tr>
<td>5</td>
<td>F</td>
<td>Frau Schäfer</td>
<td>75-80</td>
<td>alright</td>
<td>none</td>
<td>01022204</td>
<td>separated</td>
</tr>
<tr>
<td>6</td>
<td>F</td>
<td>Frau Koch</td>
<td>65-69</td>
<td>good</td>
<td>none</td>
<td>01022204</td>
<td>divorced</td>
</tr>
<tr>
<td>7</td>
<td>F</td>
<td>Frau Richter</td>
<td>over 80</td>
<td>alright</td>
<td>walker</td>
<td>01022104</td>
<td>widowed</td>
</tr>
<tr>
<td>8</td>
<td>F</td>
<td>Frau Wolf</td>
<td>75-80</td>
<td>alright</td>
<td>none</td>
<td>01022207</td>
<td>widowed</td>
</tr>
<tr>
<td>9</td>
<td>F</td>
<td>Frau Krüger</td>
<td>70-74</td>
<td>alright</td>
<td>none</td>
<td>01022207</td>
<td>widowed</td>
</tr>
<tr>
<td>10</td>
<td>F</td>
<td>Frau Hoffmann</td>
<td>over 80</td>
<td>alright</td>
<td>walking stick</td>
<td>01022106</td>
<td>widowed</td>
</tr>
<tr>
<td>11</td>
<td>F</td>
<td>Frau Schneider</td>
<td>75-80</td>
<td>good</td>
<td>none</td>
<td>01022106</td>
<td>divorced</td>
</tr>
<tr>
<td>12</td>
<td>F</td>
<td>Frau Fischer</td>
<td>75-80</td>
<td>alright</td>
<td>none</td>
<td>01022204</td>
<td>divorced</td>
</tr>
<tr>
<td>13</td>
<td>F</td>
<td>Frau Klein</td>
<td>75-80</td>
<td>alright</td>
<td>none</td>
<td>01022204</td>
<td>widowed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nr.</th>
<th>M/F</th>
<th>Name(a)</th>
<th>Age</th>
<th>Health</th>
<th>Walking Aids(b)</th>
<th>LOR</th>
<th>Marital Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F</td>
<td>Frau Schmidt</td>
<td>70-74</td>
<td>alright</td>
<td>walker</td>
<td>1022204</td>
<td>widowed</td>
</tr>
<tr>
<td>2</td>
<td>F</td>
<td>Frau Peters</td>
<td>75-80</td>
<td>alright</td>
<td>walker</td>
<td>01022201</td>
<td>divorced</td>
</tr>
</tbody>
</table>

**Survey Participants**

**Walking-By-Interview Participants**

**Focus Group Participants**

(a) All pseudonyms
(b) A walker is a walking frame with wheels
(c) Frau Schulz did complete the question regarding health status
(d) In the IGF survey, Herr Krause stated that he was married, but during conversation he spoke about his divorced wife. Therefore possible they are separated.

Table 6: Study participants
7.1.1 Survey Participants

As can be seen in Table 6 above, survey participants came from six different LOR areas in Moabit, with the largest number (6) residing in LOR 01022204. The abbreviation LOR comes from the German term “Lebensweltlich orientierte Räume”. This translates literally into English as ‘life oriented spaces’, but it can be better conceived as small-scale segmentation of the city for planning purposes.\(^{27}\) Figure 12 below shows the approximate residential location of survey participants and illustrates the boundaries of LOR 01022204. This is because, given the large number of participants residing in this LOR, the *Sozialraumanalyse* places particular emphasis on describing this planning area of Moabit.

\[\text{Figure 12: Residence of survey participants}\]

*(OpenStreetMap Deutschland 2015)*

\(^{27}\) The longest numbers belong to the smallest planning level, which is known as the planning area. There are 447 such planning areas in Berlin, with each comprised of around 7,500 inhabitants (Amt für Statistik n.d.).
As can be seen in Table 6 above, the sample was predominantly female (11 participants). This is, however, not unsurprising for two main reasons. Firstly, in Germany the population aged 65 years and over is around 57% female and 43% male (Statistisches Bundesamt 2015c)\textsuperscript{28}. This is partly because females generally have a longer life-expectancy than males (Statistisches Bundesamt 2015c). However, in Germany, the imbalance is particularly extreme as a result of the severe impacts of the second world war (Statistisches Bundesamt 2015c; Tomassini et al. 2004). Secondly, older females in areas formally belonging to western Germany, are more likely than their male counterparts to have membership in senior-specific and religious groups (Heusinger, Kammerer & Wolter 2013).\textsuperscript{29 30}

Participants were spread across the age groups, with the largest number (5) aged between 75 and 80 years. Concerning health, no participant ranked their health status at either extreme (‘very good’ or ‘not so good’). However, personal perceptions of health were at the lower end of the scale, with a lot of participants ranking their health as ‘alright’ (\textit{geht so}) but only some ranking it as ‘good’ (\textit{eher gut}). Most participants did not require the use of an assistive device when walking, and only some required the use of a walking frame or walking stick.

Most participants live alone, which is higher than the German average. In 2014, around one third of those aged 65 and over lived alone, however, the percentage of women living alone (45%) was significantly higher than the percentage of men (19%) (Statistisches Bundesamt 2015c). In the sample, the reason for living alone can to a large extent be explained by the fact that most participants were widowed, separated or divorced (see Table 7 below).

\textsuperscript{28} Data from 2013. 
\textsuperscript{29} Data from 2008. 
\textsuperscript{30} However, in most age groups (including all those above 60), a larger percentage of men than women are involved in volunteering activities (Gensicke & Geiss 2010).
### Marital Status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>No. Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>1</td>
</tr>
<tr>
<td>Married</td>
<td>1</td>
</tr>
<tr>
<td>Separated</td>
<td>1</td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
</tr>
<tr>
<td>Widowed</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 7: Marital status

Monthly income plays an important role in terms of what resources an individual has available to them. As previously noted, limited financial resources can result in limiting the mobility of older people. In Germany, in 2013 a person was classified as being at risk of poverty if their net monthly income was less than 979 Euros per month (Statistisches Bundesamt 2015c, p. 17). As can be seen in Table 8 below, six survey participants could be considered at risk of poverty. In Germany, 12.7% of men and 17.0% of women aged 65 years and over were at risk of poverty in 2013 (Statistisches Bundesamt 2015c). The overrepresentation of those at risk of poverty in this sample is likely because Moabit, despite being in a state of socio-demographic upheaval, remains a disadvantaged district (see Section 7.2.2). Interestingly, there appeared to be no evidence of association between reported health status and education level, or income level. One possible explanation is that disadvantage occurs at the neighbourhood level rather than the individual level. Despite this being an important theme, given the small sample size and the fact that responses were not provided by all participants, it will not be explored any further in this paper.
7.1.2 WBI and FGD Participants

Both WBI participants were females, aged in their 70s, who require a walker to assist them walking. The participant in the first WBI (coincidentally) lived in LOR 01022204, which is the particular focus of the Sozialraumanalyse. The WBI was conducted on a cold and rainy autumn day and lasted over three hours. The participant was asked to take us on a typical walk, and it was agreed that she would take us from her home (see #2 in Figure 12 above) to the Armeniusmarkthalle (see Figure 14 below). However, after arriving there, she decided to keep going to the SOS Kinderdorf (see Figure 14 below) where we stopped for a cup of coffee. The return route consisted of a bus trip from Beusselstraße to Turmstraße, a walk through the Kleiner Tiergarten, a bus trip back to her closest bus stop on Alt-Moabit and then a short walk to her apartment. By chance Frau Schmidt happened to be at a seniors’ meeting that I attended the following day and agreed to participate in the survey.

---

Table 8: Income, education and self-reported health status (arranged in order of income level)\(^{31}\)

<table>
<thead>
<tr>
<th>Monthly Household Income</th>
<th>Highest level of education*</th>
<th>Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 500 €</td>
<td>Haupt/Volksschule</td>
<td>good</td>
</tr>
<tr>
<td>750 – 1,000 €</td>
<td>Haupt/Volksschule</td>
<td>alright</td>
</tr>
<tr>
<td>750 – 1,000 €</td>
<td>Fachschule</td>
<td>good</td>
</tr>
<tr>
<td>750 – 1,000 €</td>
<td>Fachschule</td>
<td>alright</td>
</tr>
<tr>
<td>750 – 1,000 €</td>
<td>mittlere Reife</td>
<td>alright</td>
</tr>
<tr>
<td>750 – 1,000 €</td>
<td>mittlere Reife</td>
<td>good</td>
</tr>
<tr>
<td>1,000 – 1,500 €</td>
<td>Hochschulabschluss</td>
<td>good</td>
</tr>
<tr>
<td>1,000 – 1,500 €</td>
<td>mittlere Reife</td>
<td>alright</td>
</tr>
<tr>
<td>1,000 – 1,500 €</td>
<td>Hochschulabschluss</td>
<td>alright</td>
</tr>
<tr>
<td>not stated</td>
<td>Hochschulabschluss</td>
<td>alright</td>
</tr>
<tr>
<td>not stated</td>
<td>mittlere Reife</td>
<td>alright</td>
</tr>
<tr>
<td>not stated</td>
<td>Fachhochschule</td>
<td>alright</td>
</tr>
</tbody>
</table>

* Kept German terms. Refer to footnote for an explanation

---

\(^{31}\) Haupt/Volksschule: An elementary school up until the ninth grade. Some vocational subjects are included in the curriculum. Students generally go on to complete vocational training and apprenticeships. mittlere Reife: this is an intermediate-level school leaving certificate obtained after ten years of schooling. It does not qualify students for university. Those wishing to attend university must complete their Abitur (advanced-level school leaving certificate obtained after 12 or 13 years of schooling) Fachschule: Technical college Fachhochschule: University of applied sciences Hochschule: University
The second WBI, was in actual fact a standard sit-down interview. Early on in the interview it emerged that the participant intended to stay in the café of the supermarket (Edeka – see Figure 14 below) to read magazines after the interview was completed. Several times during the interview we (Sabine and myself) attempted to persuade Frau Peters to walk the short distance from the café to her apartment. However, the furthest she was willing to come with us was the exit of the supermarket, from where she indicated the way she walked through the car park to her apartment building. Sabine and I then walked this route to her apartment building. Given the extremely short distance, there is probably not a lot that we would have gained from having had Frau Peters with us, especially since there was hardly any traffic through the car park at that time.

The FGD was organised as part of the IGF project. However, unlike the WBIs I was not an active participant. Given the difficulty of recruiting people for the FGD, Herr Braun was allowed to participate despite not meeting the age-requirement. However, given his health issues and voluntary involvement with elderly people in need of care in the area, his opinions were considered relevant to the discussion. Despite the fact that the other two participants were wheelchair bound, many of their statements about Moabit were still related to the concept of walkability.

### 7.2 Sozialraumanalyse

#### 7.2.1 Spatial Demarcation

Moabit is a district of the inner-city municipality of Mitte in Berlin. As illustrated in Figure 13 below, Moabit can be further divided into Moabit Ost (East) and Moabit West, and then into its individual planning areas. The Hansaviertel, while being technically part of Moabit Ost, is often considered separately from the rest of Moabit due to its particular history and its physical separation (by the Spree) from the rest of

---

32 Herr Braun suffers from a number of health conditions, which he spoke about prior to and during the FGD. He was also the only study participant to rate his health as ‘not very good’.

33 There are multiple possible translations of the German terms Bezirk and Ortsteil. How the terms are translated seems to depend on the intended audience and the nationality of the translator (e.g. borough is the common translation of Bezirk for a British audience). In order to try and remain as neutral as possible, the terms have been translated here as municipality and district respectively.
Moabit. Unless specified, the spatial and physical-social environment description of Moabit will not include the Hansaviertel.

As seen in Figure 14 below, the suburb of Moabit is spatially defined by a number of natural and man-made barriers. In fact, if the Hansaviertel is excluded, Moabit’s official borders are all water bodies. While the waterways define the official boundaries, the S-Bahn lines effectively shrink the lived-in space of Moabit. In terms of main roads, which effectively divide Moabit into segments, Stromstraße is the main north-south axes, which separates Moabit Ost from Moabit West. Running east-west are Turmstraße and Alt-Moabit, both of which are shopping streets. Other main streets in the area which act as dividers are the Perleberger Straße, Beusselstraße, Paulstraße and its extension Rathenower Straße, and Invalidenstraße. The Ellen Eppstein Straße and its extension Erna-Samuel-Straße are not considered as dividing roads, as they are primarily through an industrial area and form the physical boundary to the north with the S-Bahn line.
Moabit is well served by public transport. There are three U-Bahn stations on the U9 line, which runs north-south through Moabit, however one of these (U-Birkenstraße) is not barrier free. In addition there is a station for the U55 line, however, due to its short distance and destinations, it’s unlikely to be of much use. There are two S-Bahn stations in Moabit, both of which are barrier free. In addition there are at least seven bus lines that serve Moabit, as well as three tram lines. However, the trams only serve a small corner of Moabit Ost. The Hauptbahnhof (main train station) is located in the southeastern corner of Moabit. In addition to the S-Bahn and U-Bahn stations located there, it is the main hub for national and international trains in Berlin.
In addition to main traffic corridors, industrial and administrative areas also create divisions within Moabit. This results in each neighbourhood (Kiez) having a distinctive character (Falk et al. 2011). While the industrial areas are largely situated on the fringes of Moabit the administrative areas are located in the heart of residential areas and therefore influence the character of the neighbourhood very strongly. Almost the entire block formed by Alt-Moabit, Rathenowerstraße, Turmstraße and Wilsnackerstraße is occupied by a prison and the local court (JVA). Another large administrative structure, is the Regional Office for Health and Social Services, Berlin (LaGeSo). The area annotated as “business park” in the figure houses various companies and facilities, including a university, an orthopaedic centre, a training centre, a hotel and a NGO. It is comprised of imposing and non-interactive structures and seems to be self-isolating from the rest of the district.

![Image](image.jpg)

**Figure 15: Where the business park backs onto the Spree at Stromstraße**
(Image: Author’s own)

Moabit has a number of parks, the larger ones of which are indicated in green in Figure 14 above. The largest of these is the Fritz-Schloß Park, however, the most talked about (as will be discussed later in the chapter) is the Kleiner Tiergarten. Its prominence most likely has to do with its central location – spanning the divide between Moabit Ost and Moabit West, separating two shopping streets as well as having an entrance/exit to the U-Bahn station Turmstraße.)
7.2.2 Structural Profile\textsuperscript{34}

Compared with the Berlin average, Moabit has a relatively young population. As at 30 June 2014, the population of Moabit was 74,331, 12\% (9,031) of whom were aged 65 years and over (Amt f ür Statistik 2014). Moabit Ost had a slightly higher percentage of residents aged 65 years and over (14.5\%) than Moabit West (11.5\%) (Amt f ür Statistik 2014)\textsuperscript{35}. However, as shown in Table 9 below, there are considerable differences between planning areas, with some approaching (and one exceeding) the Berlin average of 19\% (Bezirksamt Mitte 2014). Of note is the fact that LOR 01022204 has the second highest percentage of residents aged 65 and over in Moabit (excluding the Hansaviertel).

<table>
<thead>
<tr>
<th>LOR</th>
<th>Population</th>
<th>65-79 (%)</th>
<th>80+ (%)</th>
<th>65+ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moabit West</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1022101</td>
<td>3,142</td>
<td>7.2</td>
<td>1.5</td>
<td>8.7</td>
</tr>
<tr>
<td>1022102</td>
<td>5,849</td>
<td>6.9</td>
<td>1.6</td>
<td>8.5</td>
</tr>
<tr>
<td>1022103</td>
<td>220</td>
<td>2.7</td>
<td>-</td>
<td>2.7</td>
</tr>
<tr>
<td>1022104</td>
<td>17,089</td>
<td>9.3</td>
<td>2.0</td>
<td>11.2</td>
</tr>
<tr>
<td>1022105</td>
<td>4,887</td>
<td>8.1</td>
<td>1.7</td>
<td>9.8</td>
</tr>
<tr>
<td>1022106</td>
<td>10,959</td>
<td>12.1</td>
<td>3.4</td>
<td>15.5</td>
</tr>
<tr>
<td>Moabit Ost</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1022201</td>
<td>10,000</td>
<td>7.3</td>
<td>1.4</td>
<td>8.7</td>
</tr>
<tr>
<td>1022202</td>
<td>1,492</td>
<td>9.6</td>
<td>0.6</td>
<td>10.2</td>
</tr>
<tr>
<td>1022203</td>
<td>6,751</td>
<td>11.2</td>
<td>3.2</td>
<td>14.4</td>
</tr>
<tr>
<td>1022204</td>
<td>5,677</td>
<td>13.6</td>
<td>3.3</td>
<td>17.0</td>
</tr>
<tr>
<td>1022205</td>
<td>3,063</td>
<td>13.9</td>
<td>3.8</td>
<td>17.7</td>
</tr>
<tr>
<td>1022206</td>
<td>3,016</td>
<td>10.9</td>
<td>2.7</td>
<td>13.6</td>
</tr>
<tr>
<td>Hansaviertel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1022207</td>
<td>5,366</td>
<td>16.9</td>
<td>5.4</td>
<td>22.3</td>
</tr>
</tbody>
</table>

Table 9: Population characteristics of Moabit by LOR (2012)
(Bezirksamt Mitte 2014; Senatsverwaltung für Stadtentwicklung und Umwelt 2013d, own representation)

\textsuperscript{34} For most indicators included in this section, data from 2012 (published in 2013) was the most recently available data. This seems to be as a result of a legislative change in 2014, which has meant that most socio-demographic data is no longer available at the planning area level.

\textsuperscript{35} Population figures aggregated at the level of Moabit Ost include the Hansaviertel
The population aged 65 years and over is predominantly female (see Table 10 below). This broadly corresponds with figures at the Berlin level.

<table>
<thead>
<tr>
<th></th>
<th>Population aged 65+</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% males</td>
</tr>
<tr>
<td>Moabit Ost</td>
<td>44.2</td>
</tr>
<tr>
<td>(incl. Hansaviertel)</td>
<td></td>
</tr>
<tr>
<td>Moabit West</td>
<td>47.2</td>
</tr>
<tr>
<td>Berlin</td>
<td>42.6</td>
</tr>
</tbody>
</table>

Table 10: Gender split in population aged 65 years and over (2012)
(Bezirksamt Mitte 2014)

Moabit has been described as a traditional working-class area as well as a disadvantaged district of Berlin (Falk et al. 2011). According to the report *Monitoring Social Urban Development 2013* (MSS 2013)\(^{36}\), Wedding-Moabit\(^{37}\) is one of six areas in Berlin with the highest concentration of socially disadvantaged residents (Senatsverwaltung für Stadtentwicklung und Umwelt 2013c). The four “status” indicators on which this statement is based are: unemployment, long-term unemployment, benefit recipients, and child poverty. Combined, these indicators are used to classify planning areas into four categories: (1) high, (2) middle, (3) low, (4) very low. As can be seen in Table 11 below, no areas in Moabit were classified as high. All areas in the fourth category, as well as those in the third category that have exhibited negative trends across these indicators were identified as areas requiring special attention. In Moabit, there are four such areas (see Table 11) (Senatsverwaltung für Stadtentwicklung und Umwelt 2013c).

\(^{36}\) Monitoring Soziale Stadtentwicklung 2013

\(^{37}\) Wedding is a district adjacent to Moabit.
Chapter 7: Participant & Area Description

<table>
<thead>
<tr>
<th>LOR</th>
<th>Status</th>
<th>Requires Attention (Y/N)</th>
<th>Income Support (% 65+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1022101</td>
<td>low</td>
<td>Y</td>
<td>16</td>
</tr>
<tr>
<td>1022102</td>
<td>very low</td>
<td>Y</td>
<td>18</td>
</tr>
<tr>
<td>1022103</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>1022104</td>
<td>middle</td>
<td>N</td>
<td>15</td>
</tr>
<tr>
<td>1022105</td>
<td>low</td>
<td>N</td>
<td>17</td>
</tr>
<tr>
<td>1022106</td>
<td>middle</td>
<td>N</td>
<td>6</td>
</tr>
<tr>
<td>1022201</td>
<td>middle</td>
<td>N</td>
<td>14</td>
</tr>
<tr>
<td>1022202</td>
<td>very low</td>
<td>Y</td>
<td>16</td>
</tr>
<tr>
<td>1022203</td>
<td>low</td>
<td>N</td>
<td>17</td>
</tr>
<tr>
<td>1022204</td>
<td>middle</td>
<td>N</td>
<td>8</td>
</tr>
<tr>
<td>1022205</td>
<td>low</td>
<td>Y</td>
<td>20</td>
</tr>
<tr>
<td>1022206</td>
<td>middle</td>
<td>N</td>
<td>9</td>
</tr>
</tbody>
</table>

* No data because less than 300 inhabitants

Moabit West

Moabit Ost

Hansaviertel

Table 11: Selected social urban development indicators (2012)

(Senatsverwaltung für Stadtentwicklung und Umwelt 2013a, 2013b, 2013d, 2013e, own representation)

The percentage of residents 65 years and over, who are recipients of basic income support (Grundsicherung), is used as a measure of poverty in old age. Although Moabit has a comparatively young population, it has a relatively disadvantaged older population, with most LOR areas in Moabit lying well above the Berlin average of 4.8% of older residents receiving income support (see Table 11 above) (Bezirksamt Mitte 2014). Of note is the fact that while LOR 01022204 has one of the highest percentages of older people in Moabit, it has one of the lowest percentages of residents receiving income support. This is perhaps unsurprising, since the area has never been declared a redevelopment area, with the renovation of buildings having primarily been financed privately (Bezirksamt Mitte 2014).

7.2.3 Empirical Analysis – Focus on LOR 01022204

As previously noted, the empirical component of the Sozialraumanalyse focuses on LOR 01022204. This should not bias the study in any way as the survey responses of the participants who lived in this LOR were not consistently different from those participants who lived in other LORs, and in fact generally covered the same breadth of responses.

The residential area of LOR 01022204 is concentrated between Kirchstraße, Helgoländer Ufer, Paulstraße and Alt-Moabit (see Figure 18 below). The rest of the area
is dominated by the prison and courts (JVA)\textsuperscript{38}, the business park and the Kleiner Tiergarten. In addition to the business park, the commercial area is concentrated primarily along the Alt-Moabit. This stretch comprises an assortment of small (majority appeared to be independently owned) businesses including: cafes, restaurants, fast-food stores, a florist, an antique/second-hand dealer, garden store, travel agency, laundromat, ice-cream store, kiosks, key-cutter, and optician. In addition the only bank (Berliner Bank) and two pharmacies within the planning area are situated on Alt-Moabit. Despite the number and diversity of businesses, this area is not nearly as busy as Turmstraße opposite the Kleiner Tiergarten. Within the residential area, there were a number of small restaurants, cafes, kiosks and bakery-cafés\textsuperscript{39}. On Kirchstraße, the restaurants and cafes seemed to cater primarily to the workers of the business park previously mentioned. There were no supermarkets identified within the LOR, only a grocery store on the corner of Calvinstraße and Alt Moabit. The closest supermarkets have been marked in Figure 18.

\begin{figure}[h]
\centering
\subfloat{Grocery store corner Alt-Moabit and Calvinstraße}{
\includegraphics[width=0.4\textwidth]{Figure16.png}}
\subfloat{Penny Supermarket, Alt-Moabit}{
\includegraphics[width=0.4\textwidth]{Figure17.png}}
\caption{Grocery store corner Alt-Moabit and Calvinstraße}
\caption{Penny Supermarket, Alt-Moabit}
\end{figure}

\textsuperscript{38} Justizvollzugsanstalt
\textsuperscript{39} In Germany it is common for bakeries to also serve tea/coffee and have some chairs and tables for people to sit.
Although the map included at Question 20 of the survey was frequently incomplete, sometimes difficult to interpret, and not necessarily corresponding to the exact location of places, it provides a guide to the general areas where activities take place. From the map, it is interesting to note that the areas in which people are active don’t necessarily correspond to the LOR in which they live. Given the lack of supermarkets in LOR 01022204, this is to be expected. In addition, with the exception of the Berliner Bank, most banks are concentrated on Turmstraße, as well as the main post office for the area.

The northern border of LOR 01022204 is formed by the south side of Turmstraße. However, despite Turmstraße being the main shopping street in Moabit, there are no shops located along this side. Instead, there is the JVA, an administrative school.
(VAk\textsuperscript{40}) and the Kleiner Tiergarten. Despite the lack of shops, even this side of Turmstraße is very busy at present. This is because all asylum seekers arriving in Berlin are required to register at the LaGeSo (located opposite the Kleiner Tiergarten), and given the sheer number of people, they are very conspicuous at present.

In addition to the Kleiner Tiergarten (which will be discussed in Chapter 0), there is also a medium-sized park (Carl-von-Ossietzky-Park) located behind the houses situated along Spenerstraße, Malanchthonstraße and Paulstraße. Unless walking along Alt-Moabit or residing in one of the buildings backing onto the park, it would be easy not to realise the park existed. Thus it was not surprising, that on the day I visited, the park was almost empty apart from one homeless person and two people who walked through. This may be partly explained by the unfavourable weather that day. However, despite this, the park had a very isolated feel to it, had no lights and the pathways were either unmade or only partly made, making them very muddy and slippery and therefore unsuitable for older people.

![Figure 19: Carl-von-Ossietzky-Park](Image: Author's own)
![Figure 20: Carl-von-Ossietzky-Park](Image: Author's own)

There are two busy intersections on the edges of LOR 01022204 (see Figure 21 and Figure 22 below). Although both have pedestrian lights, older people are likely to have difficulty crossing in one phase of the lights and may need to wait in the middle. From

\textsuperscript{40} Verwaltungsakademie Berlin
my perspective, footpath quality was generally good, with smooth paving slabs in the middle and cobblestones on either side (see Figure 23 below). Although, sometimes at driveways, the entire footpath turned to cobblestone, potentially making it difficult for people with walkers (see Figure 17 above). In addition, the public area behind the business park, along the Spree was predominantly cobblestone (see Figure 24 below).

Figure 21: Intersection corner Stromstraße and Turmstraße
(Image: Author’s own)

Figure 22: Intersection corner Alt-Moabit and Paulstraße
(Image: Author’s own)

Figure 23: Footpath on Malanchthonstraße
(Image: Author’s own)

Figure 24: Footpath behind the business park, along the Spree
(Image: Author’s own)
Chapter 8: Linking Walkability and Social Participation

8 Linking Walkability and Social Participation

(Results & Analysis Part II)

The study results presented in this chapter will help determine the extent to which walkability can be considered a neighbourhood-level determinant of social participation of older people. In particular, the applicability of the standard definitions of walkability to an older European population will be tested, and the possibility to include physical-social environmental factors affecting social participation into the concept of walkability will be examined. Importantly, the results capture participant perceptions, researcher observations, and official data in order to develop a comprehensive understanding of the topic. This chapter will focus on exploring the survey findings and identifying key themes that can be used to link the topics of social participation and walkability. Where appropriate, findings from the WBIs, FGD and field observations will be used to support or contest the importance of these themes. Where direct quotes have been included, the translation from German into English was done by myself.
8.1 Accounting for Self-Selection

As identified in the literature, a shortcoming of many studies into walkability was their failure to control for the possible self-selection of participants\(^{41}\) into a particular neighbourhood. For this reason the survey asked participants about the reason they decided to live in Moabit. Four participants specifically cited what can be termed a ‘positive’ reason for deciding to live in Moabit. For example, Moabit was described as “a beautiful district” by Herr Müller and as “a pleasant area” by Herr Schulz. Both Frau Koch and Frau Schneider decided to move to Moabit because of its central location. For Frau Koch, living centrally was important so that she could go out more often in the evenings. For Frau Schneider another important factor was the “liveliness” of Moabit. Thus when interpreting later results, it is important to keep in mind the predisposition of the two ladies to getting out and about, and an appreciation of the aesthetics of Moabit by the two men. Furthermore, these four were the only participants who considered their health status as being “good”. This may be partly explained by the fact this group comprised the three youngest participants in the study. However, it is possible that their positive mindset lead to reporting of better health, or their better health meant they appreciated their neighbourhood more. Thus the problem of determining causality also emerged early on in this study.

For some participants, the decision to live in Moabit was simply based on the fact that it was in this district that they found an affordable apartment. The circumstances surrounding the move and the preconceptions of Moabit clearly exert an ongoing influence on perceptions of the neighbourhood and willingness to be socially engaged. Frau Peters moved to Moabit from Zehlendorf, an affluent district in Berlin’s south, seemingly unwillingly because of her ex-boyfriend. Despite the fact that she has now lived in Moabit for 25 years, she states

> I’m not a Moabiter. And I’ll never become one

(Frau Peters, WBI, p26, line 5)

Similarly, Frau Schulz from the FGD has lived in Moabit for 26 years and states that she still hasn’t got used to Moabit. When probed as to the reason for this, she replied

\(^{41}\) The term ‘participants’ unless specified denotes survey participants.
Yes, perhaps that was instilled into me … It was always spoken about in derogatory terms, whether Moabit or Wedding, those were the districts, where you just didn’t move to

(Frau Schulz, FGD, p 27, lines 14-17)

The age of the participant at the time of move is also likely to play an important role. It stands to reason that the older one gets, the harder it is to manage a move, adapt to a new neighbourhood and make new social contacts.

8.2 Walking Behaviour

8.2.1 Frequency of Walking Episodes

Participants reported that they do not often spend the day inside, without leaving their apartment at least once (see Table 12 below). This is supported by the responses provided to the question asking how many days per week participants normally go walking (for completing errands or leisure). All participants reported going walking on at least two days per week, with most reporting going on a daily, or almost daily basis (see Table 13 below).

<table>
<thead>
<tr>
<th>Frequency</th>
<th>No. Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>3</td>
</tr>
<tr>
<td>Rarely</td>
<td>6</td>
</tr>
<tr>
<td>Sometimes</td>
<td>4</td>
</tr>
<tr>
<td>Often</td>
<td>0</td>
</tr>
<tr>
<td>Very Often</td>
<td>0</td>
</tr>
</tbody>
</table>

*Table 12: Frequency of days where participant does not leave their apartment*

<table>
<thead>
<tr>
<th>Frequency</th>
<th>No. Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>daily</td>
<td>8</td>
</tr>
<tr>
<td>almost daily</td>
<td>2</td>
</tr>
<tr>
<td>4-5 days</td>
<td>2</td>
</tr>
<tr>
<td>2-3 days</td>
<td>1</td>
</tr>
<tr>
<td>1 day</td>
<td>0</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
</tr>
</tbody>
</table>

*Table 13: Frequency of walking episodes per week*

---

42 Survey Question 6.
43 Survey Question 7.
There was evidence of a correlation between frequency of walking episodes, frequency of staying at home, health status and age in the expected directions. Table 14 below has arranged responses to survey questions 6 and 7 first by the frequency of walking episodes per week and then by the frequency of staying at home episodes. The three participants who reported walking daily and never having days where they didn’t leave their apartment, also reported being in good health and were among the youngest participants. These were three of the four who had moved to Moabit for positive reasons. The fourth, Herr Müller, although listed at the bottom of the table, should in fact be considered among this group as he reported being an active bike rider and rarely staying at home.

<table>
<thead>
<tr>
<th>Name</th>
<th>Freq. Walking (days/week)</th>
<th>Freq. Staying Home</th>
<th>Health</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herr Schulz</td>
<td>daily</td>
<td>never</td>
<td>good</td>
<td>65-69</td>
</tr>
<tr>
<td>Frau Koch</td>
<td>daily</td>
<td>never</td>
<td>good</td>
<td>65-69</td>
</tr>
<tr>
<td>Frau Schneider</td>
<td>daily</td>
<td>never</td>
<td>good</td>
<td>75-80</td>
</tr>
<tr>
<td>Frau Schäfer</td>
<td>daily</td>
<td>rarely</td>
<td>alright</td>
<td>75-80</td>
</tr>
<tr>
<td>Frau Fischer</td>
<td>daily</td>
<td>rarely</td>
<td>alright</td>
<td>75-80</td>
</tr>
<tr>
<td>Frau Klein</td>
<td>daily</td>
<td>rarely</td>
<td>alright</td>
<td>75-80</td>
</tr>
<tr>
<td>Frau Wolf</td>
<td>daily</td>
<td>rarely</td>
<td>alright</td>
<td>75-80</td>
</tr>
<tr>
<td>Frau Schmidt</td>
<td>daily</td>
<td>sometimes</td>
<td>alright</td>
<td>70-74</td>
</tr>
<tr>
<td>Frau Hoffmann</td>
<td>almost daily</td>
<td>rarely</td>
<td>alright</td>
<td>over 80</td>
</tr>
<tr>
<td>Frau Krüger</td>
<td>almost daily</td>
<td>sometimes</td>
<td>alright</td>
<td>70-74</td>
</tr>
<tr>
<td>Frau Weber</td>
<td>4-5 days</td>
<td>sometimes</td>
<td>alright</td>
<td>over 80</td>
</tr>
<tr>
<td>Frau Richter</td>
<td>4-5 days</td>
<td>sometimes</td>
<td>alright</td>
<td>over 80</td>
</tr>
<tr>
<td>Herr Müller</td>
<td>2-3 days</td>
<td>rarely</td>
<td>good</td>
<td>65-69</td>
</tr>
</tbody>
</table>

Table 14: Relationship between walking episodes, health status and age

8.2.2 Reasons for Staying at Home
Most participants who have days where they don’t leave their apartment provided an explanation. Reasons for choosing not to leave their apartment could be grouped into four categories (see Table 15 below). It is important to note that at the time of survey implementation it was autumn, days were becoming considerably shorter, the

---

Survey Questions 6 & 7 plus health status and age of participants.
temperatures cooler and there were a number of rainy days. Thus it is unsurprising that a number of participants cited darkness, general bad weather and rain as reasons for not leaving their apartment. However, one participant also mentioned ice. Furthermore, following the completion of the survey at one location, a discussion regarding problems of black ice ensued. Participants were of the opinion that snow and ice clearing had deteriorated over the years and that this was due to lack of money being spent on it. The results affirm that it can be tiring for older people to move about in their environment. Those who didn’t leave their apartment because they needed a rest or didn’t feel like it were aged over 70. It is also interesting to note, that with the exception of safety concerns (not leaving the apartment when there is ice, or after darkness), no other factors related to traditional aspects of walkability were cited by participants as a reason for not leaving the apartment.

<table>
<thead>
<tr>
<th>Reason</th>
<th>No. Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather</td>
<td>4</td>
</tr>
<tr>
<td>Need a rest/don’t feel like it</td>
<td>4</td>
</tr>
<tr>
<td>Things to do at home</td>
<td>1</td>
</tr>
<tr>
<td>Darkness</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 15: Reason for not leaving the apartment

8.2.3 Factors Affecting Decision to Walk

Participants were subsequently asked to indicate the importance of 12 factors in making a decision about whether to travel by foot. Importance was ranked on a four-point scale: not important – somewhat important – important – very important. When analysing results, categories were combined into binary categories of ‘more important’ (comprising very important and important) and ‘less important’ (comprising not important and somewhat important). Table 16 below presents the importance of factors in order of importance, based firstly on the binary category “more important” and then the singular category of “very important”.

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45 Survey Question 7.
Table 16: Factors affecting decision to walk

<table>
<thead>
<tr>
<th></th>
<th>More Important</th>
<th>Less Important</th>
<th>Very Important</th>
<th>Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleanliness of surroundings</td>
<td>11</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>General feeling of safety</td>
<td>10</td>
<td>3</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Street lighting</td>
<td>10</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Beauty of surroundings</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Distance</td>
<td>8</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Obstacles on the footpath</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Feeling of safety wrt. traffic</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Availability of benches</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Availability of toilets</td>
<td>5</td>
<td>8</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Quality of footpaths</td>
<td>5</td>
<td>8</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Weather</td>
<td>5</td>
<td>8</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Availability of traffic lights and zebra crossings</td>
<td>5</td>
<td>7</td>
<td>0</td>
<td>6</td>
</tr>
</tbody>
</table>

Safety

Five of the seven factors considered as ‘more important’ by the majority of participants can be loosely grouped under the general theme of safety. Only beauty of surroundings and distance were not safety related. Cleanliness of surroundings could have been grouped under the theme of aesthetics, however it has frequently been associated with perceptions of crime and safety in the literature (see for example: Davison & Lawson 2006; Medway, Parker & Roper 2016). The issue of safety was also discussed at length during the discussion following survey completion at one of the locations. As well as the problem of snow and ice, they spoke about how they felt the traffic light phases to cross the roads had become shorter and how bike riders on footpaths present a hazard.47

An anomaly in these findings is that while a feeling of safety with respect to traffic was considered by many participants as ‘more important’, availability of traffic lights and zebra crossings was only considered by some participants as being ‘more important’ and had one of the highest numbers of responses ranking it as unimportant. These findings were supported by the conversation and observations during the first WBI. On a number of occasions we (either myself or the chief interviewer) noted or commented on crossing a busy road where there were no lights, the short ‘green’ cycle on traffic lights and the participant’s inability to cross from one side of the road to the other in

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46 Survey Question 11.
47 After one participant, a bike rider herself, said that it was sometimes necessary to do this to avoid the cobblestones on the road, the other participants conceded that it would be ok if they didn’t go too quickly and rode on the side of the street in the direction of the traffic.
time. The interviewee in contrast, generally only commented on such features in response to probing questions from the interviewer, but even then did not consider them to be particularly important, for example:

Interviewer: The traffic light phases here are quite short.
Frau Schmidt: Well, it forces you to walk a little bit faster [Goes off topic]
(Frau Schmidt, WBI, p.21, lines 30-31)

And then later in the interview as we get off one bus and walk to another bus stop

Interviewer: Ah, you want to go directly across the street. [busy three lane road]
Frau Schmidt: Yes, otherwise we have to go all the way round again to the traffic lights. I’m always too lazy for that. But I’m always very careful. I look back and forth and wait until at least one lane [break]
(Frau Schmidt, WBI, p.22, lines 22-25)

Distance and Accessibility of Destinations
Distance was also considered as being ‘more important’ by many participants (see Table 16 above). This highlights the interaction between person and environment, whereby, with increasing age, individual capacity to travel long distances diminishes. Although a linear association was not found, all participants over the age of 80 and those requiring a walking aid considered distance to be very important or important (see Table 17 below).

<table>
<thead>
<tr>
<th>Name</th>
<th>Importance of Distance</th>
<th>Age</th>
<th>Health</th>
<th>Walking Aids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frau Weber</td>
<td>very important</td>
<td>over 80</td>
<td>alright</td>
<td>none</td>
</tr>
<tr>
<td>Frau Richter</td>
<td>very important</td>
<td>over 80</td>
<td>alright</td>
<td>walker</td>
</tr>
<tr>
<td>Frau Schneider</td>
<td>very important</td>
<td>75-80</td>
<td>good</td>
<td>none</td>
</tr>
<tr>
<td>Frau Schmidt</td>
<td>very important</td>
<td>70-74</td>
<td>alright</td>
<td>walker</td>
</tr>
<tr>
<td>Frau Hoffmann</td>
<td>important</td>
<td>over 80</td>
<td>alright</td>
<td>walking stick</td>
</tr>
<tr>
<td>Frau Wolf</td>
<td>important</td>
<td>75-80</td>
<td>alright</td>
<td>none</td>
</tr>
<tr>
<td>Frau Klein</td>
<td>important</td>
<td>75-80</td>
<td>alright</td>
<td>none</td>
</tr>
<tr>
<td>Herr Müller</td>
<td>important</td>
<td>65-69</td>
<td>good</td>
<td>none</td>
</tr>
<tr>
<td>Frau Schäfer</td>
<td>somewhat important</td>
<td>75-80</td>
<td>alright</td>
<td>none</td>
</tr>
<tr>
<td>Frau Koch</td>
<td>somewhat important</td>
<td>65-69</td>
<td>good</td>
<td>none</td>
</tr>
<tr>
<td>Frau Fischer</td>
<td>unimportant</td>
<td>75-80</td>
<td>alright</td>
<td>none</td>
</tr>
<tr>
<td>Frau Krüger</td>
<td>unimportant</td>
<td>70-74</td>
<td>alright</td>
<td>none</td>
</tr>
<tr>
<td>Herr Schulz</td>
<td>unimportant</td>
<td>65-69</td>
<td>good</td>
<td>none</td>
</tr>
</tbody>
</table>

Table 17: Importance of distance

---

Survey Question 11.
This survey collected information on the number of destinations people actually walk to. However, as noted in the previous chapter, the results from this question need to be interpreted with caution. Most participants access more than 50% (>9) of the destinations (total=17) by foot or bike. Furthermore, of these participants, the majority indicated that most (or all) of the destinations that they don’t travel to by foot are not relevant (they don’t go, or only rarely).

<table>
<thead>
<tr>
<th>Location</th>
<th>Walk or Bike</th>
<th>Not Relevant</th>
<th>Not Answered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacy</td>
<td>11</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>General Practitioner</td>
<td>10</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Post Office</td>
<td>10</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Bank</td>
<td>10</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Bakery</td>
<td>10</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Neighbourhood Centre</td>
<td>10</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Hairdresser</td>
<td>9</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Park</td>
<td>9</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Café</td>
<td>9</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Supermarket</td>
<td>9</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>House of a friend/family member</td>
<td>9</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Grocery Store</td>
<td>8</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Restaurant</td>
<td>8</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Place of Worship</td>
<td>7</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Public Space/Square</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Pub</td>
<td>5</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Library</td>
<td>3</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 18: Destinations accessed by foot (or bike)49

Table 18 above shows how participants reported accessing a number of different destinations. Participants were able to select “not-relevant” if the destination was one they only visited rarely or not at all. The final column captures the number of participants who either left the response blank or left a comment explaining why they didn’t go by foot. The pharmacy was the destination frequented most by walking or biking. This is interesting for a number of reasons. First of all, the fact that the General Practitioner (GP) was also accessed by foot or bike by most participants, and the fact

49 Survey Question 8.
that only a few considered either service as not relevant, serves as a reminder that health deteriorates in old age, thus increasing the importance of access to health services. Secondly, while trips to the pharmacy usually involve making purchases, these are generally small and lightweight and easily able to be carried. This is also the case for goods purchased at a bakery, which was also accessed by most participants by foot or bike. However, the supermarket and grocery store, while accessed by many participants by foot or bike, had no participants who thought these locations were not relevant, but some participants who did not respond to these items. Given the necessity of purchasing food, this may suggest that the supermarket/grocery store is too far away for these participants to access by foot/bike. As discussed in the Sozialraumanalyse in Section 7.2.3, there were no supermarkets located within LOR 01022204, but two pharmacies.

Alternatively, this may suggest that a trip to the supermarket/grocery store involves making larger and/or heavier purchases. As a result, participants may take alternative transport, or have someone else do their shopping for them. This may not necessarily reflect only the state of the neighbourhood, but also the facilities of the building in which they live. If they do not have an elevator, going grocery shopping may not be an option.

Building access can pose a significant limitation, but it is not included in the concept of walkability. At the beginning of the first WBI, Frau Schmidt pointed out the steps leading from the street to the entrance of her building, and (given the building was originally housing for seniors) ironically commented “designed for seniors”. She then drew attention to the difficulty the steps posed when returning from shopping:

Yes, when you go shopping and you have heavy things to carry, you have to see how you get it up there.

(Frau Schmidt, WBI, p.1, lines 33-34)

In her case, she has worked out a way to manoeuvre her walker up the steps, but isn’t sure how much longer she’ll be able to do that for. However, when it comes to buying heavier things such as drinks and potatoes, she relies on her daughter who takes her shopping fortnightly and carries everything to her apartment. Similarly, Frau Peters from the second WBI also described the problem of getting her walker up the five steps at the front of her building, something that is particularly difficult when her basket is full of shopping. In this case she must ask a neighbour to help her. Frau Schmidt also
told us (unprompted) that she doesn’t participate in one of the sporting groups because it’s located in the second floor of a building without an elevator. Issues of access were also raised in the FGD, particularly in relation to access to services (post and bank) for people in wheelchairs, as well as the presence and functioning of lifts at metro stations.

*Infrastructure*

The availability of benches and toilets and the quality of footpaths have been suggested by some authors to be important determinants of the walkability of an area for older people. However, they were only listed by some participants as being ‘more important’, and in fact were considered as being ‘less important’ by many participants (see Table 16 above). For Frau Schmidt, presence of toilets was important, and she explicitly pointed out the (clean) toilets in the Markthalle. In the survey, the only item that was not important for her was the presence of benches. This can be explained by the fact that during the WBI she demonstrated how her walker could also be used as a seat. Similarly, Frau Peters also noted that she used her walker as a seat whenever she needed to take a rest.

While undertaking the first WBI, I was much more conscious of the footpath quality, as it was visible when the interviewee had difficulties, or stumbled, for example, due to a tree root causing the pavement to crack. However, Frau Schmidt did not comment on footpath quality, or the lack of dropped curbs, unless probed. With respect to the absence of dropped curbs at some street crossings, Frau Schmidt demonstrated how she was able to manoeuvre her walker. In fact, at one point she walked directly across the road, through parked cars and up the curb to reach the footpath on the other side. When the interviewer asked her about the cobblestone pavements, she replied

> Yes, you can really feel it in the arms! It’s wonderful with that thing [walker] here, I also don’t want to do without it. But when I get home, and walk long distances then my arms hurt. Really badly.

(Frau Schmidt, WBI, p.8, lines 11-13)

And then later she drew attention to the danger of falling posed by poor paving

> Interviewer: When you are out and about in your neighbourhood, so in the area of your apartment, is there anything that’s difficult for you?

> Frau Schmidt: Well, they don’t really make sure that it’s paved properly, like tripping stones. They used to repair it immediately, but now the streets are impossible.

(Frau Schmidt, WBI, p.21, lines 35-38)
8.3 Social Participation

8.3.1 Unplanned Social Participation
Informal social participation was measured by asking participants how frequently they bump into people they know when out and about in the neighbourhood, and how frequently they stop for a chat or to exchange greetings. There were no participants who reported never bumping into someone they knew and only a few who reported that this happened rarely (see Table 19 below).

<table>
<thead>
<tr>
<th>Frequency of bumping into acquaintances</th>
<th>No. Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0</td>
</tr>
<tr>
<td>Rarely</td>
<td>2</td>
</tr>
<tr>
<td>Sometimes</td>
<td>5</td>
</tr>
<tr>
<td>Often</td>
<td>3</td>
</tr>
<tr>
<td>Almost always</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 19: Frequency of bumping into acquaintances

Similarly, all participants reported stopping for a quick chat or to exchange greetings at least on occasion when out and about in their neighbourhood (see Table 20 below). Most participants reported stopping either sometimes or often for a chat. This suggests that being out and about on foot is a source of social interaction.

<table>
<thead>
<tr>
<th>Frequency of stopping for a chat</th>
<th>No. Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0</td>
</tr>
<tr>
<td>Rarely</td>
<td>3</td>
</tr>
<tr>
<td>Sometimes</td>
<td>6</td>
</tr>
<tr>
<td>Often</td>
<td>4</td>
</tr>
<tr>
<td>Almost always</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 20: Frequency of stopping for a chat

---

50 Survey Question 12.
There is some evidence of an association between informal social participation and number of walking episodes per week (see Table 21 below). The two participants who rarely bumped into someone they knew, or stopped for a chat, when out and about on foot in their neighbourhood were also the two with the lowest frequency of walking per week.\textsuperscript{52} However, these participants were aged over 80 years and therefore it is likely that many of their acquaintances have already passed away. As Frau Peters in the second WBI noted in relation to going to the Armeniusmarkthalle,

\begin{quote}
Many that you used to meet there, they’ve also gone, died and so on
\end{quote}

(Frau Peters, WBI, p.20, line 24)

There was also an association found between frequency of bumping into people and stopping for a chat. While this is to be expected, it confirms that unplanned encounters can be an important source of social interaction. Furthermore, the frequency of bumping into people when out and about seems to be related to the number of acquaintances participants have in their neighbourhood. While noting that causality is difficult to determine, it may suggest that being out walking is an important way to build social contacts. With respect to the health, age and number of years lived in Moabit, evidence of an association was less consistent. Finally, those four participants who moved to Moabit for so called ‘positive’ reasons, did not all fall into the highest categories in relation to number of acquaintances or frequency of encounters and interactions.

\begin{footnotesize}
\begin{enumerate}
\item Survey Question 13.
\item As previously noted, Herr Müller is an active bike rider and rides his bike most days of the week. Therefore, while he may only walk 2-3 days per week, he is considered as being out and about in his neighbourhood on almost all days of the week.
\end{enumerate}
\end{footnotesize}
Table 21: Relationship between informal social participation, walking frequency, and number of acquaintances in the neighbourhood

<table>
<thead>
<tr>
<th>Name</th>
<th>Freq. of bumping into acquaintances when out and about on foot in neighbourhood</th>
<th>Freq. of stopping for a quick chat when out and about on foot in neighbourhood</th>
<th>Freq. Walking (days/week)</th>
<th>Number of acquaintances in neighbourhood</th>
<th>Health</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frau Krüger</td>
<td>almost always</td>
<td>often</td>
<td>almost daily</td>
<td>a lot</td>
<td>alright</td>
<td>70-74</td>
</tr>
<tr>
<td>Frau Schmidt</td>
<td>almost always</td>
<td>often</td>
<td>daily</td>
<td>many</td>
<td>alright</td>
<td>70-74</td>
</tr>
<tr>
<td>Frau Klein</td>
<td>almost always</td>
<td>often</td>
<td>daily</td>
<td>some</td>
<td>alright</td>
<td>75-80</td>
</tr>
<tr>
<td>Herr Schulz</td>
<td>often</td>
<td>often</td>
<td>daily</td>
<td>many</td>
<td>good</td>
<td>65-69</td>
</tr>
<tr>
<td>Frau Wolf</td>
<td>often</td>
<td>sometimes</td>
<td>daily</td>
<td>a lot</td>
<td>alright</td>
<td>75-80</td>
</tr>
<tr>
<td>Herr Müller</td>
<td>often</td>
<td>sometimes</td>
<td>2-3 days*</td>
<td>some</td>
<td>good</td>
<td>65-69</td>
</tr>
<tr>
<td>Frau Hoffmann</td>
<td>sometimes</td>
<td>sometimes</td>
<td>almost daily</td>
<td>many</td>
<td>alright</td>
<td>over 80</td>
</tr>
<tr>
<td>Frau Schneider</td>
<td>sometimes</td>
<td>sometimes</td>
<td>daily</td>
<td>some</td>
<td>good</td>
<td>75-80</td>
</tr>
<tr>
<td>Frau Fischer</td>
<td>sometimes</td>
<td>sometimes</td>
<td>daily</td>
<td>some</td>
<td>alright</td>
<td>75-80</td>
</tr>
<tr>
<td>Frau Schäfer</td>
<td>sometimes</td>
<td>sometimes</td>
<td>daily</td>
<td>some</td>
<td>alright</td>
<td>75-80</td>
</tr>
<tr>
<td>Frau Koch</td>
<td>sometimes</td>
<td>rarely</td>
<td>daily</td>
<td>some</td>
<td>good</td>
<td>65-69</td>
</tr>
<tr>
<td>Frau Weber</td>
<td>rarely</td>
<td>rarely</td>
<td>4-5 days</td>
<td>some</td>
<td>alright</td>
<td>over 80</td>
</tr>
<tr>
<td>Frau Richter</td>
<td>rarely</td>
<td>rarely</td>
<td>4-5 days</td>
<td>some</td>
<td>alright</td>
<td>over 80</td>
</tr>
</tbody>
</table>

*As previously noted, Herr Müller is out and about on his bike most days of the week

8.3.2 Planned Social Participation and Destinations

**Informal**

All participants reported having met with someone (family member, friend, close acquaintance, distant acquaintance) outside of their apartment at least one or two times within the two weeks prior to completing the survey. Therefore, in addition to spontaneous ‘bumping-into’ acquaintances while out and about, all survey participants have planned encounters outside of their homes. The location of these encounters is the subject of this sub-section.

Figure 25: Walking path along the Spree

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53 Survey questions 7, 12, 13 and 14.
Responses regarding meeting location were classified into five categories as shown in Table 22 below. As can be seen, a lot of participants reported meeting in a café, restaurant or local pub. During my walks through Moabit, I also frequently observed older people sitting together in Bakery-Cafés. Meeting outside in a park, or to go walking along the Spree (see Figure 25 above) was the second most commonly cited meeting place, however, as noted by Frau Koch, she only meets in parks in summer. As this survey was undertaken in autumn, it may be possible that outdoor meeting places were under-reported because they were not in the forefront of people’s minds.

<table>
<thead>
<tr>
<th>Location</th>
<th>No. Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Café/Restaurant/Pub</td>
<td>7</td>
</tr>
<tr>
<td>Another’s Home</td>
<td>2</td>
</tr>
<tr>
<td>Organised Activity (e.g. Senior’s Group)</td>
<td>3</td>
</tr>
<tr>
<td>Outing (e.g. Theatre, Cinema)</td>
<td>2</td>
</tr>
<tr>
<td>Outside (e.g. park, public space, Spree)</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 22: Meeting places

Sense of comfort, familiarity and/or cosiness of the place were listed most frequently as the reason for choice of location (see Table 23 below). This was categorised as ‘atmosphere’. Some participants related choice of meeting spot to interest in undertaking an activity (e.g. topics discussed or to go theatre or cinema). However, no participants explained why they chose to meet at outdoor places. One participant reported meeting in a café because there were no other alternatives.

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54 Survey Question 16.
Formal

All survey participants reported participating in at least one organised activity in Moabit. Most participants attended an activity at a neighbourhood centre (see Table 24 below), which is not surprising as that was where the majority of participants were recruited. This was also the most common type of activity participated in. It is interesting to note that only three participate in sporting organisations and none in adult learning activities.

<table>
<thead>
<tr>
<th>Reason</th>
<th>No. Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmosphere</td>
<td>6</td>
</tr>
<tr>
<td>(incl. being comfortable/familiar/cosy)</td>
<td></td>
</tr>
<tr>
<td>Interest in specific activity</td>
<td>5</td>
</tr>
<tr>
<td>No specific reason</td>
<td>3</td>
</tr>
<tr>
<td>Lack of options</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 23: Reason for choosing meeting place

<table>
<thead>
<tr>
<th>Table 24: Participation in organised activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Participants</td>
</tr>
<tr>
<td>Neighbourhood Centre</td>
</tr>
<tr>
<td>Religious organisation</td>
</tr>
<tr>
<td>Sport organisation</td>
</tr>
<tr>
<td>Adult learning centre</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

Safety

The rating of factors influencing the decision about whether or not to participate in activities were similar to those affecting decision to walk. Categories were again grouped into two (see Table 25 below) to facilitate analysis. Again, a general feeling of safety was considered ‘more important’ by most participants, while the quality of the route (although this time it also included traffic lights and street lights which could be considered safety elements) was only considered by some participants as being ‘more

\[^{55}\text{Survey Question 16}^{56}\text{Survey Question 17}\]
important’. Reinforcing the importance of safety is the fact that no one ranked it as being unimportant. This was also the case for meeting friends and acquaintances.

<table>
<thead>
<tr>
<th>Factor</th>
<th>More Important</th>
<th>Less Important</th>
<th>Very Important</th>
<th>Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting friends/acquaintances</td>
<td>11</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>General feeling of safety</td>
<td>10</td>
<td>2</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Accessibility by other transport options</td>
<td>10</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Accessibility by foot</td>
<td>8</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Meet new people</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Other offers at the location</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Time of the activity</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Distance</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Potential for fun and recreation</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Quality of the route to the activity</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Facilities at the location</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 25: Importance of factors in determining participation in activities

**People**

Meeting friends and acquaintances, was cited by most participants as being a ‘more important’ factor regarding the decision to participate in activities. Similarly, meeting new people was also considered by many participants as being ‘more important’. Thus direct personal interaction emerged as an important factor to participate in activities. Formal opportunities for social interaction may be crucial for older people, such as Frau Schmidt and Frau Peters, who each stated in the WBI that they no longer have real friends. For Frau Peters, it emerged that a fortnightly seniors group at the local church is her primary source of social contact outside of her apartment. Frau Schmidt drew attention to the importance of social interaction, in particular feelings of closeness to other people. In speaking about her previous participation in a sporting group, she stated

…I also really enjoyed that. I met lots of people there, some of whom I still have contact with today.

(Frau Schmidt, WBI, p.6, lines 4-5)

The presence of people is, however, not automatically a positive characteristic. For example, during the WBI, it emerged that there are certain types of people that Frau Schmidt doesn’t like to associate with. The fact that she can’t access the sporting group which takes place on the second floor she says doesn’t matter, because of the people there. She doesn’t specify what it is about the people she doesn’t like, so it is also possible that this is a protective reaction to the fact that she can’t get in. However, her
dislike of foreigners also plays a role in choosing which groups to participate in. She says that the groups at the SOS Kinderdorf wouldn’t be her thing because

That’s too much for me, too mixed, the occasional German. And then you feel left alone. We have reservations about them, as they do about us, probably. They say ‘the conceited Germans’, but we’re not that at all.

(Frau Schmidt, WBI, p.19, lines 22-25)

**Accessibility**

Another important factor in determining participation in activities was accessibility of the location. Interestingly, accessibility by other transport options emerged as being more important than accessibility by foot (Table 25 above). Furthermore, accessibility by foot was the factor considered as being unimportant by the largest number of participants. This supports the belief that discussions of mobility among older people should not be restricted to walking and should consider all transportation options.

### 8.4 Availability of Destinations

The topic of destinations has been given its own sub-section because of its importance in linking the topics of walkability and social participation. As noted in already in this chapter, proximity and accessibility of destinations play an important role in influencing decisions about walking as well as social participation. Furthermore, destinations have an important role to play supporting social interaction, whether this be through serving as a meeting place, or simply providing a reason for people to be out and about, and therefore supporting spontaneous social interaction.

Most participants reported that there are shops, places or services that are missing in their neighbourhood. All but one participant named a specific type of destination that was missing. Shops were listed by all participants who responded to this question, and services were listed by none. Cafes and/or restaurants were mentioned by a few. In the responses to this question, it emerged that the particular attributes of a destination were important. For example, Frau Richter wrote that a “good café” and “good restaurant” were missing. Similarly, Frau Wolf wrote that “traditional German retail stores” were missing. Retail stores were mentioned by a lot of participants, a few like Frau Wolf above, in general terms, but more participants specifically mentioned or inferred that smaller, owner-operated including speciality, stores were what was missing. Other stores that were mentioned by at least one participant included: a butcher, greengrocer,
newspaper shop, shoe-and clothes stores, and a discount store. The only specific store that was mentioned as missing by multiple participants was a *Drogerie*.57

My walks through Moabit (especially in and around LOR 01022204) identified the presence of many shops, including a considerable number appearing to be independently owned. However, in the immediate vicinity of U-Turmstraße, there were considerably more chain-shops and fast-food/takeaway restaurants than further away. In the first WBI, we stopped outside a shop on Turmstraße. However, like the participants in the focus group, Frau Schmidt did not have a positive impression of the shopping strip

They took everything away from us here, the nice Hertie.58 Here was the Hertie. Well, everything has been rebuilt, until there up ahead. Such a really lovely, big Hertie. And there behind was a Woolworth. That’s now in Turkish hands.

(Frau Schmidt, WBI, p.8, lines 21-23)

Herr Braun, one of the participants in the focus group, also lamented the loss of the Hertie store. He was also not impressed with the general type of stores to be found now on Turm St

…there’s a Chinese [restaurant], a kebab shop, something with clothes, a bakery and then it starts again from the beginning.

(Herr Braun, FGD, p. 6, lines 15-16)

And then later

… we had a beautiful shopping street and to this day I can’t understand it …[interrupted by another participant, then continues]. To this day I can’t understand, why a street, which functions well, where people feel comfortable, where people like to go, where people also know one another, not just among themselves, but also the people who work in the stores, why they had to change it so much, apparently because something new had to come.

(Herr Braun, FGD, p. 37, lines 4-11)

This dislike of the change occurring in Moabit, especially along Turmstraße was a recurrent theme. To a degree, there was a general sense that “things used to be better in the old days”, but there may also be some substance to the claims. With respect to the Hertie store, in 2008 the company filed for insolvency, which lead to the closure of all

57 The German term *Drogerie* has been used here in its original to distinguish it from *Apotheke*. In English, both terms may be translated as chemist. However, an *Apotheke* is strictly a pharmacy where prescription medicines can be bought. At a *Drogerie* prescription medicines cannot be bought and there is a larger range of toiletries, make-up, and hair care- and styling products etc.

58 Hertie is a department store
stores (ges/dpa 2013). Thus, it was not a specific intention to replace the store with a shopping centre. However, with respect to the current Schultheiss Quartier development, a look at the Google Map street view, which is from October 2009 (see Figure 26 below), reveals that a butcher, greengrocer, second-hand clothing store and a furniture store used to occupy the site. Three of these destinations were identified by participants as missing in their neighbourhood.

Figure 26: Turmstraße 25-26, October 2009
(Google Maps 2009)

While most participants did consider there to be certain stores or places missing in their neighbourhood, only a few participants reported that there were places that they didn’t frequent or activities they didn’t do because they couldn’t get there by foot. Of these, one didn’t elaborate (but she had a generally negative perception of Moabit); one reported that she doesn’t go shopping and in a previous question had written that the supermarket was too far and the grocery store was no longer there; and one said that she would like to go to the cinema, theatre, cabaret or zoo but doesn’t want to have to travel there on her own.

---

59 The Schultheiss Quartier development is on the north eastern corner of the intersection between Stromstraße and Turmstraße.
8.5 Perceptions of Neighbourhood

The atmosphere of a place has already been identified as an important element for participants in choosing where to meet with people outside of their home. Similarly general perceptions of the neighbourhood can influence other aspects of behaviour, for example walking routes and choice of supermarket, as well as the overall character of the relationship between an individual and his/her environment.

8.5.1 Feeling Comfortable in the Neighbourhood

Participants were asked whether they felt comfortable in their neighbourhood. All participants responded in the affirmative. This result was anticipated, given that many participants have lived in Moabit for more than ten years and only a few have lived there for less than five years (see Table 26 below).

<table>
<thead>
<tr>
<th>Years Lived in Moabit</th>
<th>No. Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>0</td>
</tr>
<tr>
<td>1-4 years</td>
<td>2</td>
</tr>
<tr>
<td>5-10 years</td>
<td>2</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 26: Number of years lived in Moabit

Despite feeling comfortable in their neighbourhood, a few participants expressed some reservations in their comments. For example, Frau Weber wrote that there were too few shopping possibilities and Frau Schmidt lamented the changes occurring in the neighbourhood. In particular, she believes that her neighbourhood is not as safe and calm as it used to be, and that neighbours no longer know each other. In contrast, Frau Fischer, who lives in the same part of Moabit as Frau Schmidt (LOR 1022204), explained that she feels comfortable in her neighbourhood because of “quiet living, not too much hustle and bustle”. In contrast, for Herr Müller, the liveliness of the neighbourhood with lots of foreigners and children makes life more enjoyable. This

---

60 Survey Question 1.
variety of comments highlights the importance of taking into consideration perceptions, rather than just objective measures of the environment.

The diversity of opinions is also evident in Table 27 below, which categorises the main themes emerging from reasons provided as to why participants felt comfortable in their neighbourhood. For most participants the reasons why they felt at home/comfortable in their neighbourhood were different from the reasons why they moved to Moabit in the first place.

<table>
<thead>
<tr>
<th>Reason for feeling comfortable in neighbourhood</th>
<th>No. Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>People (w.r.t being a lively place and being involved in associations)</td>
<td>4</td>
</tr>
<tr>
<td>Aesthetics/Open Space (greenery, parks)</td>
<td>1</td>
</tr>
<tr>
<td>Location (centrality and good public transport connections)</td>
<td>3</td>
</tr>
<tr>
<td>General Positive Perception of Neighbourhood</td>
<td>3</td>
</tr>
<tr>
<td>Own Apartment is Nice</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 27: Reasons for feeling comfortable in neighbourhood

8.5.2 Suitability for Seniors
Participants were then asked if they considered their neighbourhood to be appropriate for seniors, to which most responded in the affirmative. Three of the four participants who moved to Moabit for positive reasons, believe that their neighbourhood is suitable for seniors. These three moved to Moabit since turning 60, thus suggesting that the senior-friendliness of their neighbourhood could have influenced their choice of apartment location. The fourth (who does not believe it is suitable) moved there before turning 60. Even though most participants felt that their neighbourhood was suitable for seniors, most also identified shortcomings in their comments (see Table 28 below).

---

61 Results from survey Question 4.
62 Calculated based on current age and length of time in Moabit.
As shown in the above table, responses could be more or less grouped under a number of key themes pertaining to walkability and social participation identified earlier in the literature. This is particularly noteworthy, because participants had not yet been asked about factors that influence their decisions to walk or partake in activities. For example, Frau Krüger suggested the importance of being able to undertake daily activities when she wrote “transport connections, doctors and shopping facilities are very good”.

Another participant even self-categorised her response:

* a small park is very close, also the Spree is close by (walking). Traffic lights everywhere (safety). Bakery and supermarket accessible by foot (supplies/provisions)

(Frau Koch, Survey)

The importance of aesthetics, in particular greenery and beautiful buildings, in influencing positive perceptions of place came through strongly in the first WBI. Near the corner of Bremerhagenstraße and Bremer Straße the following exchange occurred:

Frau Schmidt: Along here it’s beautiful, when it’s summer and everything is in bloom …

Interviewer: And these are the paths that you like to take?

Frau Schmidt: Yes. I like being in amidst greenery, everything that’s in green. I love the greenery.

(Frau Schmidt, WBI, p. 13-25)

---

* All except one referred to shopping. One referred to availability of General Practitioner in addition to shopping, one referred to everything in general.

Table 28: Reasons pertaining to suitability of neighbourhood for seniors

<table>
<thead>
<tr>
<th>Reason</th>
<th>No. Participants</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Positive</strong></td>
<td><strong>Negative</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>Apartment Bldg</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Destinations</td>
<td>5*</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Footpath Quality</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Traffic Safety</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Accessibility (footpaths, public transport etc.)</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Open Space (park, Spree, walking paths)</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>General</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

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63 Results from survey Question 5.
In addition to pointing out greenery and beautiful buildings, Frau Schmidt also repeatedly pointed out or referred to children’s playgrounds and how wonderful they are.

And then to watch the children. That’s fun. I have time, I can always [watch]. I don’t have to go home quickly. There’s nobody waiting for me anymore.

(Frau Schmidt, WBI, p.15, lines 7-8)

Her particular joy at being able to watch children is likely linked to her personal history, and current strained relationship to some of her children and grandchildren. Although not necessarily engaging directly with the children, spending time watching children corresponds to Level 2 of Levasseur et al.’s (2010) proposed taxonomy of social participation. Greenery – trees on the street and parks in the area – was also generally viewed positively by participants in the FGD. However, greenery is not inherently good. In referring to a park near to her home, Frau Schmidt says that she doesn’t often go walking there and that it’s “so isolated and hidden” (Frau Schmidt, WBI, p. 14, line 6). As already mentioned, I also had this impression when I passed through the park.

8.5.3 General Comments
At the end of the survey participants were asked if there was anything else they wished to say about life in their neighbourhood. In contrast to the general positive impression that emerged at the beginning of the survey, responses to this question were overwhelmingly negative. Of those who responded, three provided only positive comments, one provided mixed comments, and eight provided criticisms and/or identified areas for improvement. Responses were grouped under five themes (see Table 29 below). With respect to destinations, again the lack of (small) retail stores and cafes was noted, as well as the closing of a seniors’ club. The participants noting this were the same as those who had previously raised these issues.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Positive/Satisfied</th>
<th>Negative/Needs Improvement</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Destinations</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Accessibility</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>General</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Changes</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 29: General comments about neighbourhood

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64 Survey Question 21.
People

As identified already in this chapter, the presence of other people is not necessarily a positive characteristic. Of those sharing a negative impression about people in their neighbourhood, two were related to changes currently occurring in the neighbourhood, namely the increasing number of youth and asylum seekers.

At the time I moved in, my building was a house for seniors – soon after sold … Nice that young people are moving in, but no contact, the rubbish area is dirty – lots of cartons that aren’t “crushed”…

(Frau Schäfer, Survey)

The other two expressed a desire to know neighbours better and for people to be more friendly.

It would be nice if the people were a little friendlier, especially the bike riders…

(Frau Krüger, Survey)

Similarly, when Frau Peters was asked how she would assess pedestrian areas, traffic lights etc. and how easy it is to get through with her walker she replied

It’s not always easy, because too many are coming, […] the refugees now.

(Frau Peters, WBI, p.23, line 6)

Again, this highlights the complex interaction between people and space and the necessity of considering the physical and social together rather than in isolation.

People was a recurring theme during the first WBI, and seemed to act as a moderator of physical environment elements on behaviour. For example, in terms of destinations such as supermarkets, pharmacies, and market halls, the friendliness of the service personnel affected likelihood of going there and overall perception of the place. One of the reasons Frau Schmidt doesn’t like to shop at her nearest supermarket despite it being cheap, is because “there is no contact at all inside there, like there used to be” (Frau Schmidt, WBI). Service also plays a role in her choice of pharmacy, emphasised by the fact that there are at least five pharmacies that are closer to her apartment. In speaking about her pharmacy, she states

…above all they are all friendly and do their best, as much as they can. Yes, and that’s important … They also really take their time when you have a question or something

(Frau Schmidt, WBI, p.23, lines 11-12)

65 The property was sold to an international property group. The name has been removed for privacy reasons.
Similarly, the type of people present clearly affects Frau Schmidt’s overall impression of a place. For example, another reason why she doesn’t shop at her nearest supermarket is because of the type of people who shop there. Similarly, she no longer spends time in, nor walks through, the Kleiner Tiergarten (refer Figure 14), because the park is full of…

…drunks and people who don’t mean well. Well, I wouldn’t leave my children here. And that’s what it’s actually for, that children and older people can relax.

(Frau Schmidt, WBI, p. 5, lines 13-14)

She continues describing the situation in the park and why she prefers to take a detour in order to avoid the people in it. In so doing, she raises the issue of foreigners, which is a topic she returns to repeatedly during the WBI.

And now it’s of course very bad. Like previous weeks, two weeks ago. There you don’t see any [short pause] Germans anymore, only foreigners here. And there you also [like the drunk people] don’t know. I don’t want to say that they’re worse, than us, or [break-off]. There are people and there are people, just like us probably. But that’s what I’m afraid of. It is so, like with the drunk people, I can’t assess that.

(Frau Schmidt, WBI, p. 5, lines 24-29)

It’s clear that to a large degree her reasons for avoiding the park are due to safety concerns, the presence of these sorts of people making her feel scared and insecure. Her comments also reveal the importance of non-verbal communication for facilitating and inhibiting social participation when she states:

You don’t talk to anyone. They don’t understand you, or don’t want to understand you. I don’t know, but I sometimes have that feeling … You don’t talk to those people, they are somehow [break]. They look angrily at you. Well, there are so many angry faces.

(Frau Schmidt, WBI, p. 6, lines 18-19)

Negative comments regarding people were also discussed repeatedly in relation to the topic of the Kleiner Tiergarten during the FGD. It emerged that the presence of these undesirables causes people to change their behaviour and avoid the area:

… but I think, that it’s too, I don’t want to say tramps, but there are corners there, which you don’t go along especially not as an older person … and I don’t find it that nice.

(Herr Braun, FG, p. 17, lines 5-6)

Later on, all three participants of the FGD listed the Kleiner Tiergarten as their least favourite place in Moabit.

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66 It is important to note that here we have not yet entered the Kleiner Tiergarten, and that the LaGeSo (where asylum seekers must register upon arriving in Berlin) is almost directly on the other side of the park.
In addition to the type of people who occupy a space, the number of people is also important. The fact that there are many drunks, drug-dealers and homeless people who can be found in certain sections of the park appears to strongly influence the perception of this space as being unsafe. As an able-bodied, younger person, I also felt uncomfortable passing through, or alongside the section of the park directly at the entrance/exit to U-Turmstraße because of the number of single males hanging around the area, a number of whom were drinking and/or appeared to be selling drugs. Had there only been one or two, I am sure that I would have felt less uncomfortable. The number of people also appeared to affect Frau Schmidt’s use of space more generally. In talking about her favourite parts of the route we walked, she described them as being calm and not hectic.

**Accessibility**

Again, it emerged that for this group of older people, mobility is not restricted to being able to walk to places, but also about available public transport options. In response to Question 21 three survey participants complained about the tardiness of the busses as well as the express bus not stopping at all stops:

> The 245 bus doesn’t come enough for me; the TXL bus should stop at the individual bus stops

(Frau Fischer, Survey)

Both WBI participants are frequent users of public transport, in particular the bus. Frau Schmidt, complained about lateness of the bus, crowd edness, passengers not making way, and changes to a bus route (the TXL) which used to stop at the top of her street. 67

In order to answer the research questions, it is not enough merely to present the results of this study. The next chapter therefore, will compare the empirical findings with those from the literature review.

67 Frau Schmidt did not complain about the busses in the survey. This is likely because she filled this in the day after we did the WBI with her and had the impression that I knew everything already.
9 DISCUSSION

The results presented in the preceding chapter identified key themes regarding older people’s walking behaviour, social participation, and perceptions of their neighbourhood. This chapter will bring these themes together and relate back to findings from the Sozialraumanalyse, conceptual framework and literature review. The focus of this section is on identifying which physical-social environmental factors might help explain social participation of older people, specifically those which are linked to the concept of walkability. Given the explorative nature of this study, the purpose of this chapter is to identify themes for further research on this topic.

9.1 Themes
As a starting point, it is useful to highlight the themes which emerged when participants were asked (1) why they felt comfortable in their neighbourhood, (2) why they felt their neighbourhood was/wasn’t senior friendly, and (3) if they had anything else to say about their neighbourhood (see Table 30 below).
Using Walkability to Support Healthy Ageing

Table 30: Key themes regarding perception of neighbourhood

<table>
<thead>
<tr>
<th>Theme</th>
<th>Comfort</th>
<th>Senior-friendliness</th>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Destinations</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Accessibility (incl. transport &amp; location)</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Apartment Bldg.</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footpath Quality</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Traffic Safety</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Open Space/Aesthetics (incl. greenery)</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

Comparing these themes with those that emerged when specifically examining participants’ behaviour in relation to walking and social participation (see Table 31 below) it is easy to identify several cross-cutting themes.

Table 31: Key themes related to walkability and social participation

<table>
<thead>
<tr>
<th>Theme</th>
<th>Walking</th>
<th>Social-Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Accessibility</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Distance</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>People</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

Of these themes, those that emerged most strongly were: destinations (availability, accessibility and distance), safety (traffic and general), and what I have decided to term ‘atmosphere’. These themes will be briefly summarised in the following subsections.

9.1.1 Destinations (Availability, Accessibility & Distance)
The literature review showed that availability of destinations, or land-use mix, is an important element related to walkability, both in terms of being incorporated into walkability indices, and in terms of the number of destinations older people can walk to. Destinations also emerged as important with respect to providing places for social interaction and opportunities for social engagement (Allenspach 2013; Child et al. 2015;
Leyden 2003; Richard et al. 2009). Furthermore, distance to specific destinations is often included in expanded models of walkability.

Not only has the importance of destinations been identified by the literature, but it also emerged as a strong theme in this study for both walking behaviour and social participation. Thus it appears that destinations might be one of the clearest ways through which the discourses on walkability and social participation can be linked. This aligns with the reasoning presented in Chapter 5 for trying to bring the two topics together in the first place.

However, it is important to interpret the results of this study carefully. As revealed through study participants’ commentary on the changes occurring along Turmstraße, availability of destinations cannot be determined simply by measuring land-use-mix. An assessment of land use mix and distance to destinations would probably yield quite positive results in Moabit, particularly in areas close to Turmstraße and Alt-Moabit. However, this does not take into account the type and quality of shops, particularly with regard to what older people want, need, prefer and are accustomed to.

The dissatisfaction of older people with the type of destinations available was a theme that also emerged strongly in the literature. For example, in the study by Van Cauwenberg et al. (2012) which used the walk-along interview method, participants lamented the lack of local businesses. Similarly, in their study also located in Moabit, the reduction in the number of small grocery stores and speciality retailers was also noted by Falk et al. (2011), resulting in reduction of places to shop and socialise. While Turmstraße remains an important destination because of pharmacies, the post office, banks etc, the spread of Billigläden (cheap stores) has reduced attractiveness of the street (Falk et al. 2011). This is consistent with findings from this study. Furthermore, French et al. (2014) have noted, certain types of land-use mix may not necessarily promote social interaction and sense of community, and may even be detrimental to this. This can be seen in the association in some instances between older German’s dissatisfaction with these changes and negative beliefs regarding foreign ownership of stores which was identified by both Falk et al. (2011) and this study. However, the majority of participants accessed most types of destinations on foot, regardless of a
perceived shortage of specific attractive destinations. Therefore, it is difficult to
determine the effect of a change in the type and perceived quality of available
destinations on the walking behaviour of participants.

9.1.2 Safety
The emergence of safety as an important theme from the survey findings correlates with
literature on both walkability and social participation. Safety, although not one of the
three Ds, has been identified as a key element of walkability in both general and senior-
specific literature.\textsuperscript{68} It should also be noted, however, that the survey was predisposed to
identifying safety as a dominant theme as the majority of factors listed were related to
safety. Although space was provided for participants to add an extra factor, none did so.
Furthermore, future research should aim to better understand what participants consider
as contributing to a ‘general feeling of safety’. Given the results of the study, which
showed that the presence of street crossings was not considered an important
determinant of walking behaviour, but that street lighting and cleanliness were, this
suggests that feeling safe is determined to a significant extent by factors that influence
the atmosphere of a place.

9.1.3 Atmosphere
An important aspect of perceptions regarding the physical-social environment concerns,
what I have decided to term, the \textit{atmosphere} of the place.\textsuperscript{69} This comprises a number of
overlapping elements: aesthetics, comfort, familiarity, feeling of safety, and people. As
noted by Glass and Balfour (2003), it is not just physical barriers that may limit daily
activities of older people, but social factors also play a big role. In this study, this was
most clearly demonstrated with comments pertaining to the Kleiner Tiergarten and the
presence of foreigners in general. In the literature aesthetics, in particular regarding
greenery, has been positively associated with walkability for the general population, but
especially the older population. However, in this study the complex interaction between
various factors, which create the atmosphere of the place, proved to be important, rather
than examining the individual factors on their own.

\textsuperscript{68} The three D’s were discussed in Section 4.1
\textsuperscript{69} Literature on this topic exists. However, as it was a theme that only emerged through the findings from
the study, rather than at the outset, the theoretical basis will not be discussed here.
9.1.4 Infrastructure

Here it is important to note that infrastructure did not emerge as an important theme in this study, neither in terms of presence nor quality. This contrasts with findings from the literature, which stresses the importance, of good quality footpaths with dropped curbs for older people. However, it would be rash to conclude from this that these factors are not important at all and should not be considered when trying to expand the concept of walkability for older people. Just as a problem with the definition of healthy ageing risks excluding those who are not in full health, care must be taken to not just cater for the majority of older people. The fact that benches and toilets are important for some older people is enough to warrant their inclusion in expanding the concept of walkability. Furthermore, it is possible that responses (and the lack of) regarding physical infrastructure reflected a rating of the neighbourhood environment, rather than the actual importance of these factors.

9.1.5 Additional Comments

Before moving into a summary of the study’s findings and the potential implications of the study results, there are a few points worth noting. The themes that emerged from the survey, while overlapping, were also dependent on the question that was asked. When participants were asked about the suitability of the neighbourhood for seniors, their responses included many components traditionally associated with walkability. However, when asked to provide a reason for not leaving the apartment, only safety (ice and darkness) related to traditional concepts of walkability. On the one hand, this supports the need for broadening the concept of walkability. On the other hand, it highlights the importance of how questions are phrased and suggests that information about walkability may not necessarily be gained by directly asking about it.

Finally, it is important to remember that these findings relate to a group of relatively disadvantaged older people, in a relatively young and disadvantaged municipality of Berlin. As previously noted, at least six of the survey participants could be classified as being at risk of poverty. It is important to take this into consideration when transferring the findings of this study to other settings.
10 Conclusion

This study set out to determine the extent to which walkability can be considered a neighbourhood-level determinant of social participation of older people. Before answering this question, it is necessary to examine the findings related to the four sub-questions.

As discussed in Chapter 4, the ‘three Ds’ (density, diversity, and design) are the elements traditionally associated with the concept of walkability. More recently, some authors have questioned the applicability of such definitions of walkability to the older population, as well as to the European context. In contributing to this new area of research, this study sought to identify limitations of current definitions of walkability. This was not done by measuring individual elements of walkability (e.g. land-use mix and street connectivity) and assessing them against walking levels of participants. Instead, study questions focussed on eliciting participants’ perceptions of their neighbourhood environment as well as factors that influenced their walking behaviour and social participation. The *Sozialraumanalyse* was used to provide context and help with interpretations of findings.

Destinations (in terms of availability, accessibility and distance), safety, and atmosphere emerged as key themes in terms of both walkability and social participation. This supports a number of arguments. First, that an expansion of the traditional definition of walkability is required in order to make the concept applicable to the context of older
Europeans. Second, although some progress has been made with respect to this, more work needs to be done, specifically with regard to understanding the interrelationships between factors, including the trade-offs that are made by individuals. Third, quality of destinations in terms of type and accessibility needs to be better incorporated into walkability concepts. This will require an understanding of the extent to which participants ‘make do’ with what they have, and the point at which behaviour is reduced, due to lack of (appropriate) destinations.

Not only do these three themes highlight the limitations with traditional concepts of walkability, but they also point the way forward for linking the concepts of walkability and social participation. The most obvious starting point for linking the two concepts seems to be the topic of destinations. As discussed, destinations provide both places to walk to and places to interact. Thus, it follows, that if more people are out walking, then more spontaneous social interaction might also occur. However, the presence of more people does not necessarily lead to greater feelings of safety or positive perceptions of atmosphere. Therefore, a more nuanced understanding of this relationship is required.

Another outcome that emerged strongly from the case study was the important role that perceptions of the physical-social environment play. This came across most clearly in relation to negative perceptions of the Kleiner Tiergarten. As a result, this became a place that was avoided in terms of physically passing through it as well as seeking social interaction there. However, perceptions were also found to differ significantly between individuals. For example, factors that made one participant feel comfortable in their neighbourhood was sometimes at odds with what made another feel comfortable.

Finally, it is important to consider whether there are likely to be any negative effects resulting from expanding the concept of walkability. Given that accessibility – in terms of public transportation, biking and building access – emerged as a strong theme of this study, linking walkability to the concept of social participation may result in overlooking other forms of mobility as well as the intersection between public and private space. For people with physical disabilities, for whom barrier-free public transport and barrier-free buildings are likely to be even more important, the effects of this could be severe. It may therefore be more appropriate to consider mobility more
generally as being a neighbourhood-level determinant of social participation, with walkability just one aspect of this. In their comprehensive review of the relationship between the built environment and mobility in older adults Rosso et al. similarly concluded that “this research field would benefit from use of broader measures of enacted mobility […] general mobility may be more important than walking, specifically” (2011, p. 8).

The findings of this study broadly support the pathways outlined in the conceptual model presented in Chapter 5 (and presented again below). However, the precise mechanisms through which these pathways operate still need to be further developed. In particular, there is a need to better understand the role that people play in influencing how older people perceive the safety and overall atmosphere of a neighbourhood, or a specific destination.

![Conceptual Model](image)

**Figure 27: Conceptual model**

In summary, the findings of this study support the need to expand the concept of walkability, and confirm the existence of strong linkages between the concepts of walkability and social participation. Indeed, walkability could be considered an important neighbourhood-level determinant of social participation among older people. Nevertheless, although it is important to recognise how walkability may affect social
participation, it may be more beneficial to examine this through the broader concept of mobility.

10.1 Appropriateness of Methodology
Given that the study was explorative, it followed that the scope of the study was deliberately broad. All three of the primary research methods - the survey, WBIs and Sozialraumanalyse – proved useful in contributing to answering the research questions. Furthermore, triangulation enabled comparison and clarification of findings and the ability to capture a greater range of responses than would have been possible through just one method. For example, differences in responses obtained between the WBIs and survey showed the importance sometimes of being in an environment to trigger a memory (e.g. greenery, beautiful buildings), or for the researcher to probe a specific issue (e.g. the difficulty of walking on cobble stones).

10.1.1 Survey
The survey was an appropriate tool to use as a first step in exploring neighbourhood perceptions and factors that influenced walking behaviour and social participation of older people. Information was gathered on a broad range of factors and themes were identified for future research. In addition, the group environment in which the survey was usually implemented meant that an un-prompted conversation on the topic often followed survey completion. There were, however, a number of improvements that could have been made. First, the survey was designed to be self-administered, but due to vision and arthritis problems, it was sometimes necessary for me, or a friend to assist with filling out the form. Where people completed the form together with a friend, there was some indication that responses were influenced by the other person. Second, the Nadelmethod didn’t work well when participants were left alone. While this was in part due to the lack of detail on the map, to a large degree it was because they required specific guidance. Third, the ranking system included in questions 8 and 11, despite being modified post test-phase, was still problematic and interpreted differently by different participants.

10.1.2 WBI
The WBI methodology was a useful tool for this study, particularly as it facilitated a greater understanding of issues raised in the survey, and allowed both researcher and interviewee to react to the environment. This method seems particularly useful when
researching a population significantly different from the researcher in terms of physical ability, as it provides a first-hand understanding of how they perceive and interact with the environment. Unfortunately, only one of the two WBIs was actually carried out while walking. The other should actually be considered a normal interview. In addition, the first WBI did not actually follow a ‘normal’ route as intended. Rather the participant seemed to take the opportunity of having company to take a longer walk, with the total length of the WBI lasting over three hours. In fact, the next day when I coincidentally met her again, she thanked me profusely for our time, suggesting that she also benefitted from the WBI. This adds support to the fact that social contact in public spaces is an important determinant of the behaviour of older people. Ideally, however, both WBIs would have followed a ‘normal route’ and been undertaken post survey analysis in order that themes emerging from the survey could be explored in more detail.

10.1.3 Sozialraumanalyse
The Sozialraumanalyse provided important context for the survey findings in particular, and the WBI, albeit to a lesser degree. Its combination of quantitative and qualitative approaches made it amenable to tailoring to the specific topic of interest. A problem with Sozialraumanalyse lies in the fact that it is a complete methodology of itself, and it would be possible to conduct an entire study based solely on this method. Thus, in actual fact, Sozialraumanalyse, was just a term to describe the analysis of the study area and provide a broad framework for doing this. However, the volume and depth of data collection and analysis required for this to be considered a complete Sozialraumanalyse was beyond the scope of this study.

10.2 Limitations
The main limitation of this study is the fact that all participants were older people already participating in at least one organised social activity. This came about as a result of difficulties in recruiting study participants. Specifically, no method to recruit socially isolated older people, which could be carried out relatively quickly, could be identified. It was assumed that to do this would require the investment of considerable time and effort to establish contact with older people who might then be able to refer to friends. However, given the difficulty of making contact just for the survey, this was considered untenable within the timeframe.
Although touched on in the FGD and WBIs, the availability of social activities for older people was not explored in the survey or the *Sozialraumanalyse*. Social participation may be affected by limited availability of activities rather than physical environment (e.g. people at Café Thesnelda bemoaned lack of activities at the church). Distinguishing between availability of activities, willingness to participate and current participation is an important topic for future research.

As with all studies, it was necessary to limit the scope of the study. Furthermore, the small sample size meant that some associations were unable to be explored. Ideally, future research will also take into consideration differences in gender; type and strength of social contacts; financial resources; the effects of widowhood; and mental health status.

10.3 Way Forward

Providing environments which encourage older people to be physically active and support their social participation are key components of achieving healthy ageing. As noted already in this chapter, this study has identified a number of areas where future research is required. These include a need to: examine the public-private sphere interface, particularly as it relates to access to homes; better understand what shapes older people’s perceptions of safety (crime, falls, traffic); explore the idea of trade-offs in decision making processes; and to consider the importance of mobility in general, rather than just focussing on walking. In addition, it would be beneficial to examine what makes the physical-social environment conducive to “staying”, not just to walking through. This should also be explored in relation to how the presence of older people is regarded by other users of the space. Finally, it appears that research on this topic could benefit from revisiting Lawton’s ecological model of ageing (Lawton 1974, 1980) in order to produce health-promoting neighbourhood environments for older people.
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Using Walkability to Support Healthy Ageing


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Using Walkability to Support Healthy Ageing


Ziegler, F 2012, “‘You have to engage with life, or life will go away”: An intersectional life course analysis of older women’s social participation in a disadvantaged urban area’, Geoforum, vol. 43, no. 6, pp. 1296 – 1305.
12 APPENDICES
APPENDIX 1: CONCEPTUAL MODELS OF HOW SOCIAL NETWORKS IMPACT HEALTH

(Berkman & Krishna 2014, p. 324)
Wir möchten Sie bitten, die unten stehenden Fragen zu beantworten. Selbstverständlich werden Ihre Angaben vertraulich behandelt.

I. Kriterien für die Teilnehmerauswahl

Alle Fragen müssen mit „ja“ beantwortet werden

<table>
<thead>
<tr>
<th>Wohnen Sie in Moabit?</th>
<th>ja</th>
<th>nein</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sind Sie mindestens 65 Jahre alt?</td>
<td>ja</td>
<td>nein</td>
</tr>
<tr>
<td>Wohnen Sie selbstständig in Ihrer eigenen Wohnung?</td>
<td>ja</td>
<td>nein</td>
</tr>
</tbody>
</table>

II. Ihre Wohnsituation

1. Seit wann leben Sie in Moabit?
   - kürzer als 1 Jahr
   - 1-4 Jahre
   - 5-10 Jahre
   - mehr als 10 Jahre

2. Warum haben Sie sich dafür entschieden, in Moabit zu wohnen?

3. Leben Sie in Ihrer Wohnung
   - allein
   - mit Ehepartner/in
   - mit Ihren Kindern
   - mit Ihren Enkelkindern
   - mit anderen Personen
   Wie viele Personen leben in Ihrem Haushalt insgesamt? ___ Personen

III. Ihr Leben im Quartier (Kiez)

4. Fühlen Sie sich wohl in Ihrem Quartier (Kiez)?
   - ja
   - nein
   Warum?

5. Glauben Sie, dass die Gegend rund um Ihre Wohnung, in der Sie zu Fuß unterwegs sind, für Senioren geeignet ist?
   a) ja
   b) nein
   Warum?

6. Gibt es Tage, an denen Sie nicht aus dem Haus gehen?
   a) nie
   b) selten
   c) manchmal
   d) oft
   e) sehr oft
   Warum?
7. An wie vielen Tagen der Woche gehen Sie normalerweise zu Fuß? (Erledigungen und Spaziergänge)
gar nicht  an 1 Tag  2-3 Tagen  4-5 Tagen  fast täglich  täglich

8. Zu welchen Orten gehen Sie in der Regel zu Fuß?

<table>
<thead>
<tr>
<th>nicht zutreffend (ich gehe selten hin)</th>
<th>zu Fuß</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Café</td>
<td></td>
</tr>
<tr>
<td>b) Restaurant</td>
<td></td>
</tr>
<tr>
<td>c) Kneipe</td>
<td></td>
</tr>
<tr>
<td>d) Kirche/Moschee/Tempel</td>
<td></td>
</tr>
<tr>
<td>e) Supermarkt</td>
<td></td>
</tr>
<tr>
<td>f) Apotheke</td>
<td></td>
</tr>
<tr>
<td>g) Hausarzt</td>
<td></td>
</tr>
<tr>
<td>h) Post</td>
<td></td>
</tr>
<tr>
<td>i) Bank</td>
<td></td>
</tr>
<tr>
<td>j) Bäckerei</td>
<td></td>
</tr>
<tr>
<td>k) Friseur</td>
<td></td>
</tr>
<tr>
<td>l) Parkanlage</td>
<td></td>
</tr>
<tr>
<td>m) Bibliothek</td>
<td></td>
</tr>
<tr>
<td>n) Wohnung eines Freundes/Familienmitgliedes</td>
<td></td>
</tr>
<tr>
<td>o) Nachbarschaftszentrum</td>
<td></td>
</tr>
<tr>
<td>p) Lebensmittelladen</td>
<td></td>
</tr>
<tr>
<td>q) öffentlicher Platz</td>
<td></td>
</tr>
<tr>
<td>r) Sonstiges, nämlich</td>
<td></td>
</tr>
</tbody>
</table>

9. Gibt es Läden, Orte oder Dienstleistungen die im Quartier (Kiez) fehlen?
nein   ja , welche______________________________

10. Gibt es Orte, die Sie nicht aufsuchen, oder Aktivitäten, die Sie nicht machen, weil Sie nicht zu Fuß gehen können?
nein   ja welche______________________________
11. Wie wichtig sind die folgenden Faktoren für Ihre Entscheidung, zu Fuß zu gehen?

<table>
<thead>
<tr>
<th>Faktoren</th>
<th>unwichtig</th>
<th>etwas wichtig</th>
<th>wichtig</th>
<th>sehr wichtig</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Entfernung</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Wetter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Vorhandensein von Ampeln und Zebrastreifen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Qualität des Bürgersteiges</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Sicherheitsgefühl bzgl. Straßenverkehr</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) Allgemeines Sicherheitsgefühl</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) Schönheit der Umgebung</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) Verfügbarkeit Sitzbänke</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Verfügbarkeit Toiletten</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j) Straßenbeleuchtung</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k) Sauberkeit der Umgebung</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l) Hindernisse auf dem Bürgersteig (z.B. Radfahrer, abgestellte Fahrräder, Tische und Stühle)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m) Sonstiges, nämlich</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. Wie oft begegnen Sie zufällig Personen, die Sie kennen, wenn Sie zu Fuß unterwegs sind?

<table>
<thead>
<tr>
<th>Personen</th>
<th>nie</th>
<th>selten</th>
<th>manchmal</th>
<th>oft</th>
<th>fast immer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familienmitglieder</td>
<td>keinmal</td>
<td>1-2 Mal</td>
<td>mehr als 2 Mal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freunde/enge Bekannte</td>
<td>keinmal</td>
<td>1-2 Mal</td>
<td>mehr als 2 Mal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>entfernte Bekannte</td>
<td>keinmal</td>
<td>1-2 Mal</td>
<td>mehr als 2 Mal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Wie oft halten Sie mit anderen Personen ein Schwätzchen, oder tauschen Sie Grüße aus, wenn Sie im Quartier (Kiez) zu Fuß unterwegs sind?

<table>
<thead>
<tr>
<th>Personen</th>
<th>nie</th>
<th>selten</th>
<th>manchmal</th>
<th>oft</th>
<th>fast immer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familienmitglieder</td>
<td>keinmal</td>
<td>1-2 Mal</td>
<td>mehr als 2 Mal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freunde/enge Bekannte</td>
<td>keinmal</td>
<td>1-2 Mal</td>
<td>mehr als 2 Mal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>entfernte Bekannte</td>
<td>keinmal</td>
<td>1-2 Mal</td>
<td>mehr als 2 Mal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IV Soziale Teilhabe

15. Wie oft haben Sie sich innerhalb der letzten zwei Wochen mit Personen außerhalb Ihrer Wohnung getroffen?

<table>
<thead>
<tr>
<th>Personen</th>
<th>keinmal</th>
<th>1-2 Mal</th>
<th>mehr als 2 Mal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familienmitglieder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freunde/enge Bekannte</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>entfernte Bekannte</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
16. Wenn Sie sich mit anderen Menschen außerhalb Ihrer Wohnung treffen, a) wo treffen Sie sich am liebsten?
_______________________________________
___________________________________________________________________

b) Warum? _________________________________________________________
___________________________________________________________________

17. Nehmen Sie an Aktivitäten folgender Gruppen in Moabit teil?
a) Nachbarschaftszentrum nein ja – manchmal ja – regelmäßig
b) Religionsgemeinschaften nein ja – manchmal ja – regelmäßig
c) Sportverein nein ja – manchmal ja – regelmäßig
d) Volkshochschule nein ja – manchmal ja – regelmäßig
e) Sonstiges, nämlich_____________________

18. Wie wichtig sind die folgenden Faktoren bezüglich Ihrer Entscheidung, an Aktivitäten teilzunehmen?
<table>
<thead>
<tr>
<th>Faktor</th>
<th>unwichtig</th>
<th>etwas wichtig</th>
<th>wichtig</th>
<th>sehr wichtig</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Entfernung zur Wohnung</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Termin der Aktivität</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Erreichbarkeit zu Fuß</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Erreichbarkeit mit anderen Verkehrsmitteln (z.B. Bus, Tram, U-Bahn, PKW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Spaß- und Erholungspotential</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) Allgemeines Sicherheitsgefühl</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) Treffen mit Freunden/Bekannten</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) Neue Menschen kennenlernen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Ausstattung am Standort</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j) Weitere Angebote am Standort</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k) Beschaffenheit des Weges zum Angebot (z.B. Straßenbeleuchtung, abgesenkte Bordsteine, Ampeln)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l) Sonstiges, nämlich______________________________________________</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

19. Sind sie ehrenamtlich im Quartier (Kiez) tätig?
nein       ja       ➔ wie?________

Page 4/6
20. Auf der untenstehenden Karte
a) bitte markieren Sie die in der Legende genannten Orte mit der entsprechenden Nummer
b) bitte machen Sie einen Kreis um die Orte, zu denen Sie meistens zu Fuß gehen

Legende
1. Ihre Wohnung
2. Ihren Hausarzt
3. Ihre Apotheke
4. Wo Sie Lebensmittel einkaufen
5. Wo Sie sich mit Bekannten/Freunden am liebsten treffen
6. Ihre Bäckerei
7. Ihr örtliches Postamt
8. Ihre örtliche Bank
10. Ihr Lieblingsort
11. ____________________
12. ____________________
### V Andere Kommentare

21. Gibt es noch etwas, das Sie über Ihr Leben im Quartier (Kiez) sagen möchten? (z.B. Veränderungen, Freundlichkeit der Nachbarn, verfügbare Transportmittel, Sicherheitsgefühl, Wünsche usw.)

___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

#### VI. Zum Schluss bitten wir Sie um einige Angaben zu Ihrer Person

22. Welcher Altersgruppe gehören Sie an?

<table>
<thead>
<tr>
<th>65-69 Jahre</th>
<th>70-74 Jahre</th>
<th>75-80 Jahre</th>
<th>über 80 Jahre</th>
</tr>
</thead>
</table>

23. Wie bewerten Sie Ihre derzeitige Gesundheit?

<table>
<thead>
<tr>
<th>sehr gut</th>
<th>eher gut</th>
<th>geht so</th>
<th>nicht so gut</th>
</tr>
</thead>
</table>

24. Welche Hilfsmittel benutzen Sie, wenn Sie zu Fuß gehen?

<table>
<thead>
<tr>
<th>keine</th>
<th>Rollator</th>
<th>Gehhilfe</th>
<th>Sonstiges, nämlich</th>
</tr>
</thead>
</table>

25. Sind Sie weiblich oder männlich?

<table>
<thead>
<tr>
<th>weiblich</th>
<th>männlich</th>
</tr>
</thead>
</table>

26. Ihr Familienstand ist

<table>
<thead>
<tr>
<th>ledig</th>
<th>verheiratet</th>
<th>geschieden</th>
<th>verwitwet</th>
</tr>
</thead>
</table>

27. Was ist Ihr höchster Bildungsabschluss?

<table>
<thead>
<tr>
<th>Haupt/Volksschule</th>
<th>mittlere Reife</th>
<th>Abitur</th>
<th>Hochschulabschluss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion</td>
<td>sonstiges, nämlich</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

28. Wie hoch ist Ihr monatliches Netto-Haushaltseinkommen vor Abzug der Miete?

<table>
<thead>
<tr>
<th>weniger als 500 €</th>
<th>500 – 750 €</th>
<th>750 – 1.000 €</th>
<th>1.000 – 1.500 €</th>
<th>1.500-2.500 €</th>
<th>über 2.000 €</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wie viele Personen leben von diesem Betrag?</td>
<td>1</td>
<td>2</td>
<td>3-4</td>
<td>&gt;4</td>
<td></td>
</tr>
</tbody>
</table>

Alle Angaben werden vertraulich behandelt. Vielen Dank für Ihre Hilfe!
# APPENDIX 3: WALKING-BY-INTERVIEW GUIDE

<table>
<thead>
<tr>
<th>Thema</th>
<th>Leitfragen</th>
</tr>
</thead>
</table>
| Wohnhaus Wohnung - Baulich, Ausstattung    | Wie gefällt Ihnen das Haus, in dem Sie wohnen?  
  (Nach dieser offenen Frage, je nach dem was geantwortet wird, Details erfragen: im Sinne von Barrieren, etc.)  
  Wie gefällt Ihnen Ihre Wohnung?  
  Gibt es Schwierigkeiten in Ihrer Wohnung? Welche? |
| Wohnumgebung - Barrieren im öffentlichen Raum | Gehen Sie hier häufiger fuß lang? Nutzen Sie hier auch öffentliche Verkehrsmittel? Wie klappt das so?  
  Können Sie sich hier in der Nähe auch irgendwo hinsetzen, wenn Sie erschöpft sind? (ausruhen) |
| Alltagsgestaltung (Beratung, soziale Teilhabe, Mobilität) | Soziale Kontakte  
  -Kennen Sie die Menschen hier im Kiez? Wie ist der Kontakt?../zu Nachbarn? Treffen Sie sich auch auf der Straße? Wen?  
  -Leben Ihnen nahestehende Personen hier im Kiez?  
  Un-/geliebter Ort  
  -Gibt es (noch andere) Plätze/Orte, wo Sie sich gerne aufhalten?  
  -Wo gehen Sie gar nicht entlang? Wo gehen Sie nicht hin? Warum?  
  Pflege/Unterstützung  
  -Was fällt Ihnen schwer, wenn Sie im Kiez unterwegs sind?  
  -Was wünschen Sie sich, was beim Unterwegssein im Kiez hilft? |