A qualitative study exploring the perceptions of older people about their social participation in the online world relative to their social participation in the physical world

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A thesis submitted in partial fulfilment of the requirements of Bournemouth University for the degree of Doctor of Philosophy

Abstract

Addressing the issues raised by the ageing population, valuing the contribution of older people in the society and improving their quality of life are some important challenges of the modern society. Social participation is important to people for ageing well in later life. Staying socially active can help older people to maintain good physical and emotional health and well-being and cognitive function. However, participation in social activities seems to decrease with age due to physical disability, illness, loss of family and friends, loss of community and perceived lack of opportunities.

However, the demographic shift of the twenty-first century coincided with the digital revolution and resulted in the emergence of a new world for participation called the online world. The online world provides opportunities for older people to take part in social activities similar to the physical world and it has changed the way people can communicate and interact with each other. The number of older people using these opportunities was relatively low compared to the other age groups. However, recent years have remarked tremendous growth in the number of older people making use of these opportunities. Therefore, this study explored the perceptions of older people about their social participation in the online world relative to their social participation in the physical world.

Qualitative research approach with a generic qualitative design was used to address the research questions. Twenty semi-structured intensive face-to-face interviews were carried out to collect the data. Thematic analysis was carried out to generate the themes that address the research question. The results revealed the integration of the online world into the lifestyle of the people. The participants in this study perceived the online world as an addition to their lives, providing more opportunities to participate in different activities. The study also

identified areas that need more attention to keep and attract older people into the online world.

Furthermore, the study identified that older people using the online world experienced improved social connectedness and subjective well-being. The findings of this research will inform the areas to be improved for better online world experiences for older people.

Acknowledgements

Thank you, lord almighty for leading me and restoring my soul throughout this journey. This research project would not have been possible without the Bournemouth University VC scholarship.

I am deeply grateful for the support and guidance of many individuals throughout the course of this doctoral study. My first acknowledgement must go to my supervisory team. Thank you so much, Professor Carol Bond, Dr Jacqui Hewitt-Taylor and Prof Sarah Hean for their ongoing support, enthusiasm, passion, and unceasing belief in me. Their gentle encouragement supported me throughout this PhD journey and had helped me grow as a researcher and as a person. I would like to thank my supervisors for their expert guidance on all aspects of the study and providing thoughtful and constructive feedback on my work throughout.

Thank you to Louise Bryant for her administrative support, encouragement, and help throughout this study. I would like to thank all the generous contributions of my study participants, without whom this work could not have been conducted. They welcomed me into their homes and attentively answered my questions. I am also extremely grateful for Help & Care charity and my colleagues for their help in recruiting participants to this study. I would also like to thank all the wonderful people who supported me throughout the journey and a special note of thanks to Louise Heckford.

A special thought is devoted to my parents who continue to encourage me to follow my dreams, for always believing in me and breaking all stereotypes. Special thanks to my wonderful sisters, brothers-in-law, beautiful nephews and niece for their ongoing support.

But most of all to Achachan for all the support and love. To him, I dedicate this thesis.

Contents

1 Introduction

1.1 Overview

This study explored the perception of older people in participating in different activities in the online world and its effect on their physical world engagement. Findings from this study are significant for older people and others who work with older people or people who might be interested in the current global demographic trends or who work to utilise the opportunities of modern technological innovations to prepare for an active later life. Moreover, specifically, this thesis suggests valuable insights to people and stakeholders involved in designing, implementing, or examining interventions or policies directed at older adults to improve their later life.

This chapter explains the context of this study and provides an overview of the background for this study. Before starting to explain the context of this study, it is important to acknowledge that ageing is more complex and diverse than a chronological number. “Ageing may be defined as a series of time-dependent anatomical and physiological changes that reduce physiological reserve and functional capacity” (Ahmed & Tollefsbol 2001). There is no standardized accord on defining the beginning of ‘old age’. However, ‘old’ or ‘older people’ are frequently used throughout this thesis to represent a senior population.

Although there is no agreed definition of ‘old’ or ‘older people’, most of the developed countries including the UK accept the chronological age of 65 as a phase of entering into the older age (Age UK 2017; NICE 2015). Therefore, unless otherwise stated, the term ‘old’ or ‘older’ in this study is applicable for people aged 65 or over. Likewise, they are a diverse social group that develop a range of skills gained through life’s experience. Therefore, this simplistic, chronological definition of older people used throughout this research study serves as a convenient definition for research and in reality, there is no such typical homogenous group and their diversity needs to be acknowledged.

1.2 Context: Population Ageing and implications for public policy

Population ageing is a global phenomenon in which the proportion of people within the older age range in an age structure is increasing rapidly, regardless of region. Interestingly, the underlying causes of population ageing are analogous, despite regions or countries (McDaniel

& Zimmer 2013). The decrease in the birth rate, an increase in the life expectancy, a decrease in the mortality rate, and migration to other parts of the world are considered to be the main causes of population ageing (Evans 2009; Kudo et al. 2015).

Although the underlying causes of population ageing are similar throughout the world, the consequences, challenges, and opportunities differ enormously in different countries. The specific challenges and opportunities are considered to be the outcomes of many aspects such as economic conditions, current epidemiological realities, social circumstances of the older population, and intergenerational relation, along with region-specific circumstances (e.g. living circumstances, pensions) that impact upon the older generation. Generally, some countries, especially developed countries, have considered population ageing as a greater concern, while others as a minor concern. However, population ageing is understood as a significant demographic phenomenon, which has a vital impact on policy over the next few decades (WHO 2015; McDaniel & Zimmer 2013; Evans 2009; Zaidi 2008).

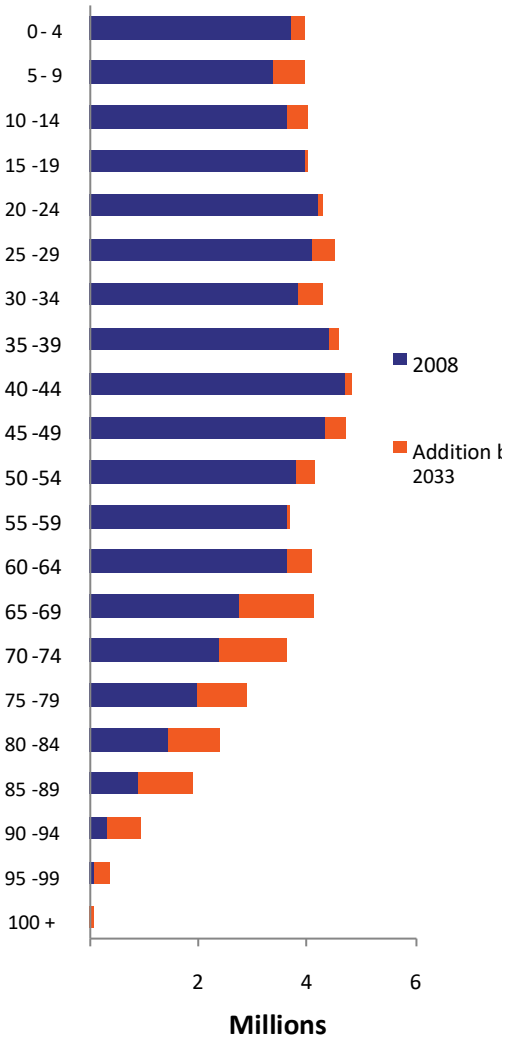

Figure 1. Projected increase in the UK population 2008-2033 Source: Cracknell (2010)

Like the rest of the world, the UK population is ageing and is projected to increase in the coming decades (Office for National Statistics 2018). The projected increase in the population of the UK by 2033 is concentrated in older age groups (Cracknell 2010). Figure 1 shows the projected increase in the UK population 2008-2033 is concentrated in older groups by five-year age bands.

In the UK, 11.1 million people out of 64.1 million are aged 65 or over, and the proportion of older people is projected to increase in the next coming years and will be expected to double by 2050 (Cracknell 2010; Age UK 2017). This is evident in the report on Ageing, published by the House of Lords (2013), which stated that the UK population is ageing rapidly, and longer lives can be beneficial. However, the UK is not prepared enough to face the challenges and implications of the ageing population. Furthermore, the report notifies that not addressing these consequences with urgent action may result in a sequence of crises in the UK.

It has been acknowledged that population ageing has direct implications for societies and economies. Population ageing affects all aspects of society, including health and social care, workforce, families and households, housing and transport, networks and social interactions, and leisure and community participation (Harper 2006; Harper & Hamblin 2014). In the UK, the spending on healthcare and social care costs are considered to be the main challenges of the ageing population, which consequently impact on the public finances as a whole (Cracknell 2010).

Nevertheless, this demographic change has given a negative image of old age. The important fact about the population ageing is that it is not a problem; rather, it is one of the greatest achievements of this generation (Torp 2015). Moreover, a societal burden view about ageing is now outdated and older people are viewed as an asset to society (Januva & Goss 2012; Russell 2011). Therefore, in order to achieve the vision of making ageing a positive experience and to address the issues raised by the older population, several new policies and frameworks are being developed. These frameworks are aimed to improve the health, activity, independence, quality of life, social and economic opportunities, and participation of older people, based on their appropriateness to face the implications of population ageing (McDaniel & Zimmer 2013).

For example, three of the main popular policy frameworks developed to improve the lives of the older population are successful ageing, active ageing, and healthy ageing. These policy frameworks are adopted in many western countries, including the UK, with and without modifications to fit with in their societies (Rowe & Kahn 1987; WHO 2002; Walker 2009; WHO 2015). These policy frameworks enabled to redefine ageing and create a positive image of old age. An overview of these frameworks will be presented in the next sections.

1.2.1 Successful Ageing

Early research in ageing mainly focused in dividing the older people into diseased and healthy, and failed to recognize their heterogeneity. Successful ageing is a longstanding concept. However, Rowe and Kahn (1987) developed this concept of Successful Ageing on emphasising the importance of activity in the lives of older people. Rowe & Kahn proposed the Successful Ageing model, which consists of three main components such as "low probability of disease and disease related disability, high cognitive and functional capacity, and active engagement with life" (Rowe & Kahn 1997; pg. 433).

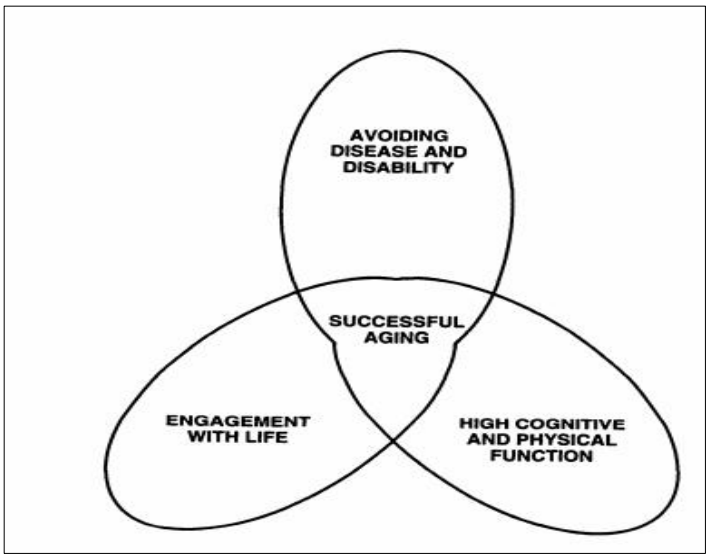

Figure 1. Successful Ageing Model (Source: Rowe & Kahn 1997; pg. 434)

The first component of the successful ageing model is more than the absence of disease at later life but rather staying healthy by reducing the risk factors of disease and disability of old age. They emphasise the importance of environmental and behavioural factors, along with genetic factors in determining the risk of disease in later life. The second component of successful ageing is maximising the cognitive and physical functions of older people by actively

performing in different physical and intellectual activities. The third component of successful ageing is engagement with life, which has two major elements: Social relation and productive activities (Rowe & Kahn 1997).

Successful ageing became a popular model in social ageing research mainly in the United States, and over the past few decades, the model was used and studied by many researchers and has been modified and interpreted in different ways. However, there has been a lot of criticism around this model. The successful ageing model has overestimated old age to be disease free, where the evidence from other studies showed that ageing without disease or disability is unrealistic (Motta et al. 2005). Moreover, labelling someone as 'unsuccessful' because of their illness or disability was portrayed as the demerit of this model (Strawbridge et al. 2002). Furthermore, measuring successful ageing was difficult as it lacks the subjective views of older people about ageing successfully (Chapman 2005). These criticisms showed that this model emphasises older people's problems rather than their contributions in the society. However, the successful ageing model was modified and improved by incorporating many other factors that matter for individuals, such as spirituality (Crowther et al. 2002), cultural prevelance (Lewis 2011), and subjective criteria (Coleman 1992).

In response to the population ageing, the World Health Organization (WHO) proposed a new policy framework called Active Ageing in 2002. This policy framework shifts away from a passive vision of ageing to a more active approach towards opportunities of ageing. The next section provides an overview of this policy framework called 'Active Ageing'.

1.2.2 Active Ageing

Active Ageing is the most prominent policy framework prevalent in Europe, proposed by World Health Organization to address the issues raised by the population ageing, at the second United Nations World Assembly on Ageing, held in Madrid in 2002 (WHO 2002). According to WHO (2002; p.12), "Active Ageing is the process of optimising opportunities for health, participation, and security to enhance the quality of life as people age."

Active ageing specifies the importance of enhancing the quality of life of older people by improving the three main themes. "Active" was defined as "continuing participation in social, economic, cultural, spiritual and civic affairs, not just the ability to be physically active or to participate in the labour force" (WHO 2002; p. 12). Therefore, this framework shifts away

from a passive vision of ageing towards active ageing. Moreover, this framework highlighted the critical need for a change in the mind-sets of society from viewing ageing in terms of economic notions towards a more holistic approach, comprising of quality of life, mental and physical wellbeing, and social participation (Foster & Walker 2013; Walker 2002).

However, critics argue that active ageing policymakers continue to over-emphasise physical activities, neglecting the mental and physical ability of older people (Walker & Maltby 2012). Therefore, the definition of activity should be clearly articulated, and older people should be involved in determining the role of active ageing in their lives (Foster & Walker 2013). Nevertheless, active ageing provides an overall objective of changing attitudes towards older people and providing them with better opportunities to remain active and to fully participate in society.

In order to effectively implement active ageing and to fully respond to the challenges of population ageing, Walker (2002) proposed seven key strategies that should be embodied in the active ageing framework. Firstly, they are 'meaningful activity' for the individuals, including paid employment, volunteering, and leisure activities or caring. The second strategy is that active ageing is not a policy just for old age, but rather for all age groups, and thereby proactively tackling the issues of diet, lifestyle and consumption that lead to illness at all ages. The third strategy is to involve all older adults in the policy framework, acknowledging their frailty and dependence. The fourth strategy is to maintain an intergenerational solidarity to enable fairness between generations. The fifth strategy highlights the importance of incorporating the rights and obligations for social protection, lifelong education and training. The sixth strategy urges the freedom for older people to design their own activities, thereby providing opportunities for a bottom-up approach, along with the top-down approach. Finally, their national and cultural diversity should be respected.

Walker (2002) argues that the strategies, if applied, will create a fairer, inclusive society that is applicable for all ages. Moreover, the strategies, if incorporated in designing the active ageing policy, will make sound, economic sense and will improve the quality of life of older people. Incorporating the strategies, active ageing has the ability to embrace the issues of population ageing. However, critics argue that an individual's financial situation (Boudiny 2013), longevity difference (Liotta et al 2018) and country-specific challenges within Europe

(EC 2011) affect the implementation of active ageing policies. Therefore, later, Foster and Walker & Foster (2015) added an eighth strategy to adapt the new changes, such as religious difference, technology and assistive devices. This strategy incorporates the 'flexibility' approach to active ageing over the life course and meeting their requirements.

Active ageing delivers a potential platform for building ageing policies that addresses the concerns of diverse individuals, stakeholders and countries. However, policy proposals and recommendations will not advantage any societies unless they are supplemented by practical actions (Kalache et al. 2005). Therefore, in order to address the implementation challenges of active ageing and to meet the new requirements of the changing society, WHO proposed a new framework called Healthy Ageing in 2015. The next section provides an overview of the Healthy Ageing framework.

1.2.3 Healthy Ageing

Addressing the population ageing issues, WHO initiated the Active Ageing framework in 2002, which aimed to improve the quality of life of older people and equip societies to age actively. Although, the Active Ageing framework identifies the importance of health in older age, in its own right and for better participation opportunities for older people, little detail was provided regarding the systemic changes required for it to be effective. Therefore, considering the changing world, challenges and gaps of implementing the active ageing framework and revisiting the progress made since 2002, WHO proposed this new policy public health framework for action called 'Healthy Ageing' (WHO 2015). Subsequently, Healthy Ageing replaces the Active Ageing framework. The Healthy Ageing framework aimed to improve the lives of ageing people during 2015 – 2030.

Healthy Ageing focuses on enabling older people to remain as contributors to their families, communities and economies. WHO aimed to achieve this through building and maintaining intrinsic capacity (IC), and by enabling older people with a given level of IC to engage in the activities that matter to the individuals. WHO defines Healthy Ageing "as the process of developing and maintaining the functional ability that enables the wellbeing in older age" (WHO 2015; pg.28). Functional ability means having the capability to perform what an individual, values in their life. This involves capability to perform basic needs, contribute to society, to be mobile, able to establish and maintain relationships, to learn, grow, and make

decisions. Functional ability is made of both intrinsic capacity and environmental factors and its interaction with the individual. Intrinsic capacity is the combination of all the physical and mental capacity of an individual. Environmental factors constitute all the extrinsic factors that form the part of an individual's life at micro and macro levels (WHO 2015).

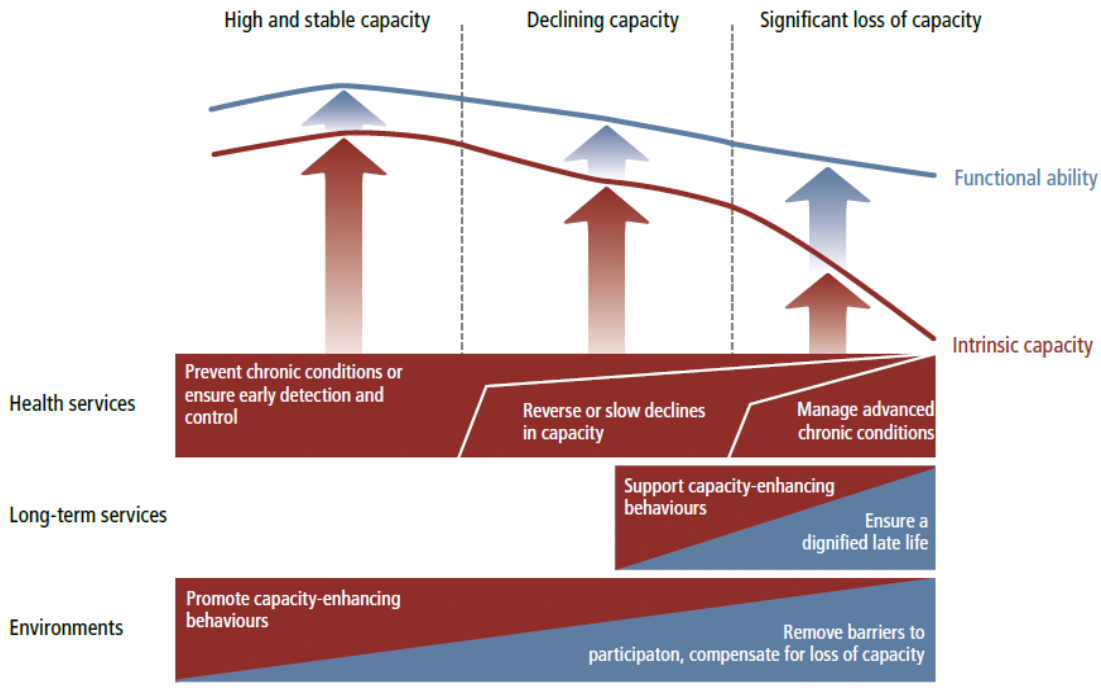

Figure 2. Public Health framework for Healthy Ageing (Source: WHO 2015)

The dynamic interaction of intrinsic capacity and the environment they live in, plus the resources they are able to use, will establish the FA of an individual (WHO 2017). Within the framework the key areas for action to enable the people to achieve their FA includes aligning the health systems to meet the needs of the older population, systems that provide long-term care, providing an age-friendly environment and improving measurement, and monitoring and understanding different approaches to incorporate diversity of older adults and country-specific challenges (Beard et al.2016). However, the challenges to implement the actions in these key areas require inevitable resources. Addressing the diversity of individuals and overcoming the country-specific challenges to invest for the future in these key areas provides opportunities for older people to live their lives to the fullest. Therefore, the next section provides an overview of the implications of these policies in the UK and the main implementation challenges.

1.2.4 Policy implications and challenges in the UK

The older population are the fastest growing demographic in the UK, and the trend is set to increase in the coming years (Cracknell 2010). Therefore, taking into account the opportunities and challenges of an ageing society, it is vital to maintain independence and empower older people to actively engage and participate fully in society to ensure their wellbeing (Allen 2008). Moreover, improving the opportunities and quality of life of older people along with enabling them to stay longer in their own homes became an important priority of the UK government (Gov UK 2013; Gov UK 2015).

The general accord on the importance of policies to promote healthy ageing or active ageing are equally important. Moreover, maintenance of physical activity and social participation are the foundations of health and wellbeing in later life where other factors too contribute. However, best efforts in health promotion and disease prevention do not merely help older people to stay healthy. In order to achieve a healthy ageing society, there should be policies that reduce the risk of developing disease and improving a healthy lifestyle (Age UK 2011; Zaidi & Howse 2017).

In particular, the challenges in the UK are enormous to develop a healthy ageing culture. Age UK (2011) evidence review set out the enormous challenges faced by the UK, which includes mobility issues, vision problems, hearing problems, dual sensory loss, difficulty in performing daily activities, and dementia. Moreover, the challenges include the cost of social care and health service cost. Another significant challenge involves mitigating isolation and loneliness in older people. Allen (2008) noted that there is an increasing risk of socially isolated older people and the trend is set to increase in the next 15 years. Moreover, living alone, age discrimination, a bad neighbourhood, and quality of housing all contribute as risk factors for health ageing (Age UK 2011; Allen 2008).

However, different policies and programmes are developed in the UK to address the concerns, risk factors of healthy ageing, and improve the wellbeing of older people. ‘Ageing Well’ was such an important innovative programme for improving the quality of life of older people. This scheme enabled volunteers and participants to get involved in local initiatives to improve the physical, social and emotional health and wellbeing of older people (Harkness et al 2012). There are many other initiatives by the UK government and local authorities to improve the

wellbeing of older adults. Health trainers and health champions program, prevention in practice, local clubs and cafes, activity centres, walking projects, Partnerships for Older People Projects (POPPS), Fit as a Fiddle (FAAF) and Link Age Plus are a few to name (Age UK 2011).

There is no doubt that longer life expectancy is a valuable asset of this generation. Moreover, the research, policy and evidence on ageing provided many positive opportunities for older people to make the most of their later life. Evidence shows that in developed countries, people are challenging and rethinking the set of stereotypes of viewing ageing and are looking to spend these extra years in innovative ways (Age Wave 2011; Beard et al. 2015). The expectations to spend the later years productively uplifted the expectations of people to plan their lives differently and changed the way in how people view ageing. Moreover, development of different policies like Active Ageing to address the challenges of the population ageing resulted in reports that guides government policy and the socio-economic resilience of the UK focusing on improving older people's health, independence, activity, social and economic opportunities, and participation (Open Government Licence 2016), and achieving quality to extended years. Moreover, population ageing resulted in the formation of a new generation termed as the fourth generation. The next section explains the emergence of the fourth generation.

1.2.5 Fourth generation

According to the Office for National Statistics (2018 a), by the mid-2017, the UK population was estimated to reach up to 66 million. The population in the UK is ageing like the other parts of the world and 18.2% of the UK population were aged 65 years and above. This is projected to increase in the coming decades. However, within older age, there emerges a new generation called the fourth generation, who are 85+. Out of the 18.2%, 2.4% constitutes the fourth generation. One of the main challenges in implementing policies to improve the lives of older people is the diversity of older people (WHO 2015) that make the young old and the oldest old. Likewise, the people of other generation older people within the young old and oldest old are diverse.

Moreover, the impact of inequalities in health and pension, outdated stereotypes of ageing, and the changing world creates challenges in designing policies to improve the lives of older people. In the report published by Age UK (2013) about the ‘oldest old’, it highlights that just

like every other generation, the fourth generation vary widely depending on their personal, social and health characteristics, and emphasise that policies should be designed to accommodate the diversities with the younger old and oldest old within these generations.

This study acknowledges the diversity of older people but has not separated the youngest old and oldest old as separate groups or excluded them from this study. This is because the oldest old, which forms the fourth generation, can live an independent life and enjoy a good quality of life. Moreover, there is an importance of physical activity, enhancement of social relationships, elimination of social isolation and loneliness for this generation too. Therefore, this group has not been separated from the youngest old in this study.

Policies to address the population ageing emphasize the importance of an active later life. This highlights the significance of social participation at a later age to improve their well-being. Moreover, policy frameworks discussed at the beginning of this chapter highlighted the importance of social participation. This provides the foundation for the background to this study and the next section discusses the background to this study.

1.3 Background to the study

Older people may face different challenges in old age that reduces their social life, leading to social isolation and loneliness. The concept of wellbeing has become a central focus for health and social policy in the past few decades. Prilleltensky (2005) claims that the well-being of any person is highly dependent on the well-being of their relationships and on the community. Therefore, wellbeing is a multifaceted construct, encircling different psychological and social dimensions. Physical and psychological health often receives attention from the health and social care services. However, social life receives less attention but is also a crucial factor for the overall wellbeing of older people. Therefore, maintaining independence and empowering older people to actively engage and participate fully in society helps to improve the wellbeing of the older population (Allen 2008). Social isolation and loneliness are two important challenges that need to be addressed when considering the social life of older people.

1.3.1 Social Isolation & Loneliness

Social isolation and loneliness are the key issues discussed, related to the social dimension of quality of life of older people. Social isolation and loneliness effect individuals' quality of life

and wellbeing, unfavourably affecting their health (Cattan et al. 2005; Davidson & Rossall 2015). Social isolation is an objective notion arising from the deficit in the number of social relationships and contacts. Loneliness is a similar concept but is a subjective measure of the negative feelings associated with the perceived lack of social networks (Victor et al. 2009; Wenger et al. 1996; Peplau & Perlman, 1982). Social isolation and loneliness can be experienced by people of any age, but a significant pattern is that both appear to increase with age. Moreover, older people are particularly vulnerable to social isolation and loneliness, owing to loss of friends and family, mobility or income (Age UK 2007; Age UK 2010; Victor et al. 2009).

According to Age UK (2017), 32% of older people are living alone in their own homes and are more vulnerable to social isolation and loneliness. Out of 32%, 8.5% of older people often or always feel lonely. Surprisingly, 3.1% older people have not had a conversation with friends or family for over a week and 1.7% for over a month, and 12.04% of older people are chronically lonely. Moreover, 41% of older people in the UK feel out of touch with the pace of modern life, and 12% say they feel that they are seperated from society (Age UK 2017).

Several factors cause social isolation and loneliness in the older age. Old age is a period of life-changing events such as retirement, age-related disability, relocation or loss of family and friends, health condition, and socio-economic status, which can lead to social isolation and loneliness in older people (Phillipson 2013; Zaidi 2014). It is identified that there is an abundance of research papers suggesting the negative effects of social isolation in older people. However, there is a lack of evidence that health professionals are assessing this condition and taking adequate measure to prevent social isolation in older people (Nicholson 2012).

Social isolation and loneliness effect upon individuals' quality of life and wellbeing, unfavourably affecting their health. It is widely recognised that social networks could affect an individual's health, and behavioural, psychological and physiological pathways. Moreover, staying socially isolated can result in ill health, which can lead to social isolation and loneliness (Age UK 2010; Valtorta & Hanratty, 2012; Berkman et al. 2000).

Further effects of social isolation and loneliness include that lonely and isolated older people are at a higher risk for mortality (Steptoe et al. 2013). Moreover, the meta-analytic review

conducted by Holt-Lunstad et al. (2015) identified that social isolation and loneliness can lead to early mortality. Furthermore, social isolation and loneliness can result in high morbidity (Tomaka et al. 2006), development and progression of cardiovascular disease (Knox & Uvnas-Moberg 1998), high blood pressure (Hawkley et al. 2010), cognitive impairment (Fratiglioni et al. 2004; Beland et al. 2005) and depression (Mead et al. 2010).

Furthermore, older people living alone in their own homes in the UK are more vulnerable to social isolation and loneliness, and this results in their move to assisted living or care homes, thereby increasing the health and social care costs (Windle et al. 2011; Savikko et al. 2010). Loneliness also affects emergency and planned hospitalisation and readmission (Molloy et al. 2010). However, there is evidence that mitigating social isolation and loneliness can improve the quality of life of older people (Savikko et al. 2010; Age UK Oxfordshire 2011).

There are several interventions to tackle social isolation and loneliness in older population. Social participation in the wider community attempts to reduce social isolation and loneliness in older people (Cattan et al. 2005; Bolton 2012; Masi et al. 2010). Therefore, improving opportunities for social participation is important for older people's overall wellbeing. The next section explains the term 'social participation' in the context of this research study.

1.3.2 Social Participation

Social participation is a term used throughout this thesis and therefore, it is important to define this term for this study. Social participation is important to improve the social lives of older people. There is a substantial rise in the amount of research related to social participation, as it is considered a key indicator for ageing well. Although several studies described social participation in the field of gerontology, there is no agreement around a common definition for social participation.

According to the content analysis carried out by Levasseur et al. (2010), among 43 definitions of social participation identified that the definitions mostly focused on "a person's involvement in activities that provide interaction with others in the society or the community" (Levasseur et al. 2010, Pg: 2144). Therefore, the main dimensions derived in their content analysis from the previous studies on participation are involvement, social activities and interactions (Levasseur et al. 2010).

With the focus on these dimensions, Levasseur et al. (2010, pg: 2146) proposed a taxonomy of social activities based on the "1) levels of involvement with others and 2) goals of these activities". This taxonomy aimed to conceptualise social participation and specify the differences of related concepts like participation and social engagement.

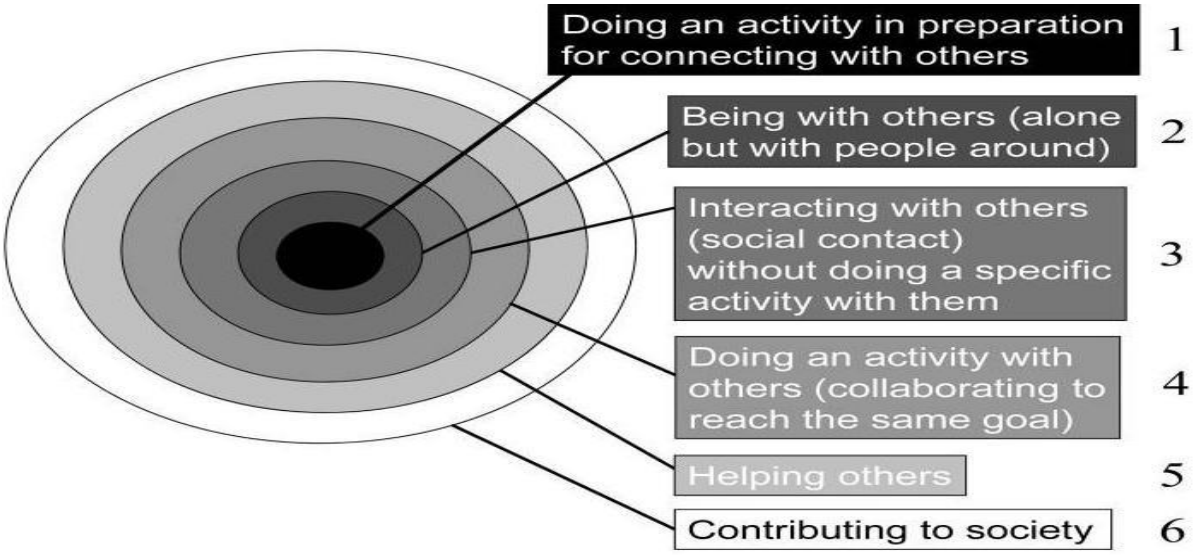

Figure 3. Proposed taxonomy of social activities (Levasseur et al., 2010)

The first level of the taxonomy of social activities involves daily activities of individuals that are carried out alone for preparing them to contact with others (e.g. eating, dressing). The second level includes activities where the individual is not in direct contact with others, but others are around (e.g. walking around a neighbourhood). The third level is the level in which individuals interact with others without doing a specific activity with them (e.g. shopping). The fourth level includes the collaboration of the individual with others to perform an activity that helps to achieve a specific goal (e.g. playing tennis). The fifth level involves activities that help others (e.g. volunteering). Finally, the sixth level involves an individual's contribution to the society (e.g. civic participation) (Levasseur et al. 2010).

Different terms have been used in the previous studies to explain social participation. The most common terms used in the field of gerontology related to social participation are 'participation' (Morrow-Howell et al. 2014), 'social engagement' (Glass et al. 2006), 'community participation' (Beckley 2006), 'social integration' (Berkman 2000), and 'social networking' (Raymond et al. 2008). Although these terms are used interchangeably for social participation in some studies, the hierarchical taxonomy helps to distinguish social

participation from these similar terms. ‘Participation’ involves activities from level 1 through level 6, whereas ‘social engagement’ involves level 5 and 6 (Levasseur et al. 2010)

The other terms such as ‘social integration’ and ‘social networking’ also partially refer to the third through fifth levels, but they are actually viewed as an outcome of social participation rather than a particular type or level. However, ‘community participation’ is mainly used by rehabilitation field interchangeably with social participation, as they focus mainly on group activities or activities in the community. However, social participation involves level 3 through level 6. That is, it involves all the social activities excluding daily activities that are done alone or parallel with others (Levasseur et al. 2010).

Moreover, the taxonomy shares a resemblance with the authors who focused on conceptualising social participation. A study carried out by Mars et al. (2008) on older people with chronic physical illness identified social participation as a positive experience, having one or more of these three dimensions: social contact, contributing resources to the society and accepting resources from the society. Mars et al. (2008) in their study also identified examples of social participation and conceptualised it into four main domains as “(i) social contact and social activities, (ii) work and informal support, (iii) cultural activities and public events, and (iv) politics and media”.

In another longitudinal and cross-sectional study carried out by Bukov et al. (2002), they theoretically conceptualised social participation as a “conduct of actions in which individuals share their resources with others”. The result of this socially oriented sharing results in the contribution of resources to the social environment, as well as taking away resources from the social environment.

Therefore, considering the inventory and content analysis conducted on 43 definitions of the social participation by Levasseur et al. (2010), the prominent study for the conceptualization of the social participation as perceived by the older people with chronic illness by Mars et al. (2008) and the theoretical conceptualization of the social participation after a longitudinal and cross-sectional study carried out by Bukov et al. (2002), an acceptable definition involving different aspects of the social participation was used for this study. ‘Social participation’ is defined as an activity performed formally or informally by an older person that involves either

a social contact or contributing resources to the society or accessing resources from the society. These three aspects of social participation are detailed below.

1.1.1.1 Social contact

Social contact involves any forms of communication with family, friends and community. Social relationships with the family members are considered to be the main source of social support in later life (Antonucci et al. 2007, Li et al. 2014). Moreover, friendship relations are important for older people as they provide companionship and social integration (Huxhold et al. 2014). Social contacts with family and friends play a vital role in the social participation of older people. People with closer social relationships tend to be more active and healthier in their later life (Rook & Charles 2017).

Social contacts with family and friends and the social support drawn from these social contacts are positively associated with the quality of life of older people (Unsar et al. 2016; Bowling 2005) and have positive health outcomes (Cornwell et al. 2008). Moreover, a higher level of social participation is associated with the social contacts and relationships (Toepoel 2013). The study conducted by Mars et al. (2008) on older people identified social contact as one of the main characteristics of social participation. Further, in their study, the participants agreed that the people initiating the social contact as well as the person receiving the contact are both participating, thus establishing reciprocity.

1.1.1.2 Contributing resources

The study conducted by Mars et al. (2008) on older people identified that contributing resources to others and society is one of the characteristics of social participation. The ability to contribute resources to society is one of the crucial dimensions of wellbeing. Contributing resources include identifying and utilising their skills, time, knowledge, personal characteristics, interests, concerns, networks, relationships, and tangible resources for their society (Paylor 2011).

Contributing resources will help older people to gain confidence and a sense of personal worth. In the UK, an asset-based approach is being introduced to view the ageing population as an opportunity rather than a burden by valuing the contribution of older people to society. Therefore, this aspect of social participation links with the asset-based approach for ageing

well, which suggests viewing the ageing population as assets providing opportunities rather than being a burden (Januva & Goss 2012).

1.1.1.3 Receiving resources

According to Mars et al. (2008), receiving resources are considered only as social participation if the person receiving appreciated the reception of the resources. The receiving resources must provide a positive experience for that person to consider it as social participation. Receiving information and services, and access to opportunities and benefits are the forms of receiving resources that are important to older people to keep them engaged in life (Age UK 2011). The next section explains the platforms available in the modern world to socially participate in different activities.

1.3.3 Platforms for social participation

Social participation seems to decrease in the later ages due to many reasons such as chronic diseases, leading to multimorbidity, disability, lack of friends, changes in the community and family, lack of facilities and funding, and perceived lack of opportunities (Bukov 2002; Wilkie 2007; Rozanova 2012). However, due to the advancement in technology in the past two decades, there are more opportunities to improve the participation of older people in different social activities and empower their skills to participate fully in society. It resulted in creating a new platform for social participation and therefore, social participation can take place in the physical world as well as in the new platform termed as the online world in this study.

1.3.3.1 Online world

The advancement of technology in the past few decades witnessed the shifting from mechanical and analogue electronic systems to digital systems. The digital revolution of the twenty-first century coincides with the demographic change, which dramatically transformed the way people communicate and interact with each other (Wessels 2007). The invention of personal computers in the early 70s is considered as the formal starting point of the digital revolution (Ramasubramanian 2008). However, the idea came forward much earlier by the introduction of the concept of 'World Brain', which is a "complete planetary memory for all mankind" by H. G. Wells in 1930 (Wells 1938). In the 1960s, ARPANET was developed by the

US Department of Defense, which laid the foundation stone for the innovation of the modern internet (Ramasubramanian 2008).

Later in the 1970's personal computers, Graphical User Interface (GUIs) and Geographic Information Systems (GIS) were invented. However, the early personal computers and GUIs were very expensive, bigger in size, and were used only mainly for defence or military purposes (Ramasubramanian 2008). In the early 1980s, personal computers and software to serve applications were invented, which resulted in the use of computers in other areas other than military or defence. Later in 80's networks, email and discussion boards were invented, and in 1990, the World Wide Web was invented, which led to the breakthrough of the digital revolution (Ramasubramanian 2008).

The World Wide Web was released to the public in 1993. Due to the advancement in fibre optics, satellite and wireless technology, computers, and its application evolved profoundly in the past decade. Therefore, computers and the internet are everywhere now and in all aspects of life, and they intensely changed the way people work, travel, play and interact in the last decades (Heddeghem 2014). From 1993 to 2014, remarkable innovations were introduced in technology, such as web-based communication, mobile computing, virtual world, smart technology, applications, and social networking sites. Now computers and the internet are an inevitable part of people's lives, despite age and geography. The internet plays an important role in all fields such as education, entertainment, socialisation and daily functioning.

The digital revolution embarked the emergence of this new platform for social participation, called the online world in this study. It is important to define the term 'Online World' in this study to guide this research forward, as well as to set the social implications of the 'Online World' from the related terms such as world or physical world or virtual world. Gaston (2013) in his book, 'The Concept of World from Kant to Derrida', analyses the philosophical definitions of the world by five main philosophers and concluded that the "World is not an objective sphere with tangible boundaries; rather, it is a highly subjective notion of personal space". Another scholar, Bartle (2003), defined 'World' as "an environment that its inhabitants regard as being self-contained. It does not have to mean an entire planet. It is used in the same sense as 'Roman World' or the 'World of high finance'." These definitions

address the notion of the concept 'World'. However, this study needs to address what makes the world 'online'.

The digital revolution of the twenty-first century remarkably changed the communication opportunities of people. The invention of personal computers, and of the World Wide Web, were followed by remarkable innovations in technology such as web-based communication, mobile computing, virtual world, smart technology, applications and social networking sites, resulting in the invasion of technology into daily lives of people, despite their age (Heddeghem et al. 2014).

Moreover, past few years witnessed more innovations in the market on a day to day basis. The sharp rise in the number of active users on online social networking sites such as Facebook (over one billion users near the end of 2012; 2 billion active users in 2017) and the persistent proliferation of mobile phones show that human communication and interaction are increasingly taking place on digital platforms (Heddeghem et al. 2014).

Therefore, it is important to define the online world as we started spending most of our time on this platform of communication and participation recently. However, there is no clear definition of this subjective world. According to the Oxford Dictionary, 'Online' means "controlled by or connected to a computer using the internet or another computer network". Therefore, Online World can be defined for this study as a self-contained personal space, which is controlled by a computer or connected to a computer using the internet.

The components involved in human communication and participation in the online world is facilitated by the internet and is not limited to computers but also involves the information and communication technology devices like computers, smartphones, tablets, laptops and internet applications, including websites, social networking sites, email, web chat, discussion boards, and other applications, which are capable of creating a personal, subjective living space. People can communicate, interact, play, work and entertain themselves in the online world.

It is important to differentiate the similar concept such as the virtual world from the online world. Several scholars define the virtual world, and the definitions are commonly more technical in nature. Bell (2008) defined the virtual world as a "Synchronous, persistent

network of people represented as avatars, facilitated by the networked computers". The systematic review conducted by Girvan (2013) on the definition of the virtual world and the related terms, like virtual environment, virtual reality, identified that the virtual world is mostly related in defining 3D games and a 3D environment created with synchronous, persistent communication and interaction simulated by computers.

In contrast, the online world is a subjective space created by the internet. The communication and interaction can be synchronous or asynchronous, and people can spend time actively interacting or passively exploring the information using the internet. To give a clear idea about the definition of the online world, this study draws out the essential components of the online world. The main component that contributes to creating the online world is the internet. However, just internet connection cannot create a subjective space. Several other components contribute to creating the online world. They are the devices, interfaces and human beings. All these components together can lead to the online world.

1.3.3.1.1 *Internet*

The online world can be established only by the internet connection that opens the door into the new space. Internet connections enable to establish contacts and communications crossing national and geographical boundaries. It allows expanding the past horizons of imagination.

1.3.3.1.2 *Devices*

Just internet connection cannot create space. Several other components contribute to creating the online world. Information and communication technology devices like computers, smartphones, tablets, laptops and other devices that enable us to communicate and interact, and these devices are termed as hardware.

1.3.3.1.3 *Interface*

Interfaces or applications like browsers, websites, social networking sites, email, web chat, discussion boards, and other applications such as games, which are capable of creating a personal, subjective living space, contribute to the establishment of the online world.

1.3.3.1.4 *Human beings*

Finally, the essential component of the online world is human beings. People communicate, interact, play, work and entertain themselves in the online world and thus create a subjective experience of the world. The communication and interaction in the online world can be synchronous or asynchronous. Human beings can be an active user or a passive user in the online world.

Interestingly, the online world has created new opportunities for us to communicate, take part in different activities, entertain, play, work, gather and update information, and a new platform to express our views from anywhere in the world.

1.3.3.2 Physical world

Social participation commonly takes place in the physical world. The term 'physical world' is used to reduce the ambiguity, while explaining the communication and interaction in the online world and the face to face communication and interaction. Therefore, in this study, the platform in which face to face communication and interaction takes place is termed as the physical world.

1.3.4 Dimensions of social participation

Social participation and its effects can be determined with many dimensions. Social connectedness and subjective wellbeing are two important dimensions to identify the effects of social participation, and hence in this study, these two dimensions are used to identify the effects of social participation in the online world.

1.3.4.1 Social connectedness

Social connectedness is an important dimension of social participation. According to Townsend and McWhirter (2005) in their literature review about connectedness, they suggested that the most discreet definition of connectedness is presented by Hagerty et al. (1993; pg.4), where "Connectedness occurs when a person is actively involved with another person, object or group or environment, and that involvement provides a sense of comfort, wellbeing and anxiety reduction."

Social participation includes contact with family, friends and the community through different social networks. It provides a connectedness in individuals and is essential for people

(Cornwell et al. 2008). Social participation that results in the integration of social ties and networks provides connectedness to older people. Moreover, having many direct bonds with people gives older people alternative ways to access valuable resources, which in turn increases a person's chances of receiving needed support and services (Cornwell et al. 2008). Therefore, this study explores social participation in the online world and its effect on social connectedness of older people.

1.3.4.2 Subjective wellbeing

Subjective wellbeing is another important dimension of social participation. According to Diener (1984; p.2), subjective wellbeing is defined "as the degree to which people feel good about and think well of their lives". The subjective dimension of wellbeing focuses on personal views of life experience that matches the social, economic, and health indicators by measuring the degree to which a perceived requirement is being met and the significance of that perceived need to one's overall quality of life (Haas 1999; Easterlin 2011).

Later, Diener et al. (2002) defined subjective wellbeing as "a person's cognitive and affective evaluations of his or her life". The cognitive component points to what one thinks about their life satisfaction or life as a whole. The affective component points to one's emotions, moods and feelings. Affect can be positive or negative. Therefore, according to Diener et al. (2002), a person is said to possess high, subjective wellbeing if they have a high level of life satisfaction, greater positive affects, and little or less negative effect. Evidence suggests that social participation in the physical world improves the subjective wellbeing of older people (Ellison et al. 2007; Zhang & Zhang 2015). Therefore, this study explores social participation in the online world and its effect on the subjective wellbeing of older people.

1.4 Summary of Introduction Chapter

This chapter outlined the important global phenomenon, which is termed as 'population ageing'. This is one of the greatest achievements of this generation. However, population ageing posits new challenges to the nations and in order to address the challenges, several policies and frameworks were developed globally. The three important policy frameworks such as successful ageing, active ageing and healthy ageing are discussed earlier in this chapter. Further, this chapter discussed the policy implications in the UK and the challenges to implement these policy frameworks. The main focus of these frameworks is improving

wellbeing and quality of life of older people and enabling them to live their later life to the fullest.

Enabling older people to improve physical, social and psychological wellbeing is equally important for their overall wellbeing. However, social wellbeing receives less attention and therefore possesses more challenges to address this area. Social isolation and loneliness are the main issues under social wellbeing of older people. Social participation is capable for mitigating social isolation and loneliness. However, social participation seems to decrease as age increases and the age-related disabilities contribute to the reduction in participation.

Along with population ageing, this generation witnessed another great revolution called the 'digital revolution'. This provided a new platform for social participation called as 'online world' in this study. Therefore, older people can make use of this new online world as well as the physical world to socially participate in their later life. This chapter explained the terms social participation and online world, as well as social connectedness and subjective wellbeing, which are the two main dimensions of social participation. This study focuses further to explore the social participation of older people in the physical world and online world.

1.5 Outline of the thesis

This thesis is organised into six chapters. This introduction chapter provided an overview of the context and background of this study. In chapter two, the literature review is presented in four sections. Section one reviews the literature on social participation in the physical world. Section two reviews the literature on social participation in the online world. Sections three and four reviews the existing literature in the social connectedness and subjective wellbeing dimensions of social participation respectively. Chapter three describes the research design for this study. Chapter four is presented with the findings of this study after conducting thematic analysis on the data collected. Chapter five discusses the findings with the existing literature and discusses the contribution of new knowledge from this current study. Chapter six presents the study conclusions. It includes the limitations of the study and implications for policy and practice, as well as areas for further research.

2 Literature Review

2.1 Overview

This chapter discusses the literature available on social participation and its importance in later life. By comparing and contrasting the available platforms for social participation, this chapter highlights the importance of making use of available opportunities to improve social participation in later life. Furthermore, this chapter discusses the effect of online world social participation in social connectedness and subjective well-being in the lives of older people.

An ongoing literature search was conducted throughout the study, with the objective of identifying the scope and direction of research within the field of social participation and the online world. The databases that were included within this search were supported by 'EBSCOHOST' such as Academic Search, SpringerLink, Web of Science, Science Direct, PubMed, Medline, CINAHL, and PsychINFO. A variety of search terms were used to ensure that a high volume of background research was located. These included: Ageing, Social participation, online, perceptions, social connectedness and subjective well-being. Publications were selected that had been written in the English language. The reference lists were carefully scrutinised to help discover relevant publications. Also, research conducted outside academia such as Age UK, as well as reports from United Kingdom (UK) Office for National Statistics, European Commission, Gov UK were also included.

This chapter is divided into four sections. The first section reviews the existing literature about the social participation of older people in the physical world. The second section reviews the existing literature about the social participation of older people in the online world. The third section reviews the existing literature about the social connectedness experienced using the online world social participation. Finally, the fourth section reviews the existing literature about the subjective well-being experienced using online world social participation.

2.2 Social participation in the physical world

Social participation is an important aspect in later life and is a central topic in research on aging. There are many studies that explored 'social participation' in the field of gerontology. Many theories were developed in order to explain social participation, especially at an older age. This section discusses the significant theories of social participation, the current figures

of social participation of older people in the UK, the benefits of social participation, and factors contributing to social participation in older people. This section provides an insight into the importance of social participation for older people.

2.2.1 An introduction to theories of social participation

As discussed in the introduction chapter, people are challenging and rethinking the stereotypes of viewing aging. People are aiming to spend their extra years productively, changing the way of viewing aging. Changes in the aging perspective from a burden to a positive experience resulted in theoretical changes in the field of gerontology. In this context, social participation became an important area of study for scholars and practitioners. Disengagement theory, activity theory, continuity theory and socioemotional selectivity theory are some of the main theories discussed within the context of social participation and ageing. The disengagement theory portrayed old age as a negative era of life, whereas the other theories focused on a positive and productive ageing experience (Pinto and Neri 2017). These theories are discussed in the next section.

2.2.1.1 Disengagement theory

This is the first social science theory of aging. This theory was developed by Cumming & Henry (1961) during a five-year research study called 'The Kansas City Study of Adult Life' of 275 healthy people aged between 50 and 90, who had minimum money for their independence. This theory states that "normal aging is a mutual withdrawal or disengagement between aging person and others in social system to which he belongs – the withdrawal initiated by the individual himself or the others in the system. When disengagement is complete, the equilibrium that existed in middle life between the individual and the society has given way to a new equilibrium characterised by greater distance and a changed basis for solidarity" (Cumming 1963; Pg. 377).

This theory caused a lot of critics as soon as it was published, as the theory assumes the disengagement process is inevitable and universal and lacked to acknowledge the diversities of older people (Maddox 1964). Moreover, the disengagement theory failed to capture the older people's new engagement that they start after their retirement (Cornwell et al. 2008). Furthermore, the theory possessed an 'escape clause' where disengagement is considered to be inevitable, which means it must happen at some point in an individual's life and is universal,

which means it must happen everywhere and at all times, and intrinsic, which means that social factors alone cause it. Moreover, the theory was developed on the basis of the study conducted by Cumming and colleagues for a fixed period of time and lacked the data of the samples' previous social engagement (Hochschild 1975).

However, a systematic review conducted by Pinto & Neri (2017) to identify the trajectories of social participation and the associated theories of social participation in an aging population coined that disengagement theory as an earliest theory of social participation in old age. Out of 31 longitudinal studies published between 2001 and 2016 in the systematic review showed that one study implicitly used the disengagement theory to explain the reduction in social participation at an older age. Consequently, 21 studies presented a decrease in levels of social engagement as people age. Three studies found an increase in social participation after retirement, and five studies reported the absence in significant changes in the social participation at a later age. Although disengagement does take place with aging, this is regarded as a result of withdrawal by society from the ageing person, against the will and desire of the person (Havighurst 1961).

In response to the disengagement theory, a new theory was proposed, emphasizing on the activities and life satisfaction of older people. The next section will provide an overview of the 'Activity theory'.

2.2.1.2 Activity Theory

Opposing the disengagement theory, Havighurst (1961) proposed a new theory of aging called the 'Activity theory'. The activity theory states that successful aging occurs when older people stay active and maintain their social roles (Havighurst 1961). The practitioners of the activity theory believe that people maintain the activities and attitudes they follow during their middle age as long as possible to their later age. The theory urged the need for finding substitutes for the activities they performed during their middle age to the later age. According to Havighurst (1961; pg. 8), "Successful aging means the maintenance as far and as long as possible of the activities and attitudes of middle age".

The activity theory claims that the participation in different activities is good for overall well-being and improved quality of life of older people (Winstead et al. 2014). The main purpose of this theory is to find substitutes in activities and thereby finding the best way to handle the

late life challenges (Nilsson et al. 2015). However, Havighurst (1961) emphasized the importance of taking consideration of an individual while deciding successful aging. People who are happy and lead an active life in their middle age will be happy and satisfied if they have an active and productive later life. Consequently, passive and home-centered people during their middle age seem to be more satisfied with disengagement in their later life. Moreover, Havighurst acknowledged that there is a kind of disengagement force for people when they pass their 70s and 80s, but people tend to retain their personality lifestyles. Later, in the 1970s, the continuity theory came into existence and the next section provides an overview of the continuity theory of aging.

2.2.1.3 Continuity Theory

The continuity theory was proposed by Atchley (1972). He argued that "people who age successfully are those who carry forward their values, relationships from middle to later life". Middle-aged and older people attempt to preserve and maintain their existing internal and external structures by using continuity. Both internal and external continuity are very important aspects for ageing. The continuity theory assumes gradual evolution whereas the activity theory focuses on a homeostatic or equilibrium model, aiming to achieve equilibrium state in response to change (Atchley 1989). However, Fox (1981) argued that continuity means sameness, and this is not possible in an ever-changing aging process. Consequently, Atchley (1989) explained continuity as a coherence or consistency of patterns over time.

Later in 1989, Atchley explained the importance of activities by taking away the emphasis on the significance of the volume of activities that are undertaken by older people to improve their well-being to a more realistic model. The new model emphasised adjustment and adaptation to challenges of aging by the substitution and redistribution of the activities. However, these theories have emphasized the importance of creating different opportunities for participation to improve the well-being in later life. However, Carstensen and colleagues introduced a new theory of later life and social goals. The next section provides an overview of the socioemotional selectivity theory.

2.2.1.4 Socioemotional Selectivity Theory

The socioemotional selectivity theory proposed by Carstensen et al. (1999) states that the motive to participate in different social roles or activities depends on two categories. The first

category related to acquisition of knowledge and the second related to the regulation of emotion. Considering time as the crucial factor, with open-ended and limited, knowledge-related goals takes priority if more time left or time is open-ended and emotional goals assume primacy with limited time left.

According to Carstensen et al. (1999; pg. 166), the "Socioemotional selectivity theory addresses the role of time in predicting the goals that people pursue and the social partners they seek to fulfil them". Three factors contribute to the development of this theory. Firstly, social interactions are core for survival, with predispositions toward social interest and social attachment. Secondly, people engage in actions guided by the motivation to achieve different goals and finally, different goals compete each other and selection of goals is the key trigger for actions. Furthermore, this theory considers that the time as open-ended or limited influences the goal selection process. Therefore, the theory argues that people will modify their networks and relationship in their later age to become more meaningful and preserving their emotional well-being.

Like the disengagement theory, the socioemotional selectivity theory argues that there is a decrease in the number of social contacts at a later age and it is the choice of the individual opposing the prevalence of external factors. However, these two theories suggest different motivating forces for the decrease in social contact and its end results. The disengagement theory argues that reduction in social contact is a process of old age and preparing for death, whereas this theory takes the life-course perspective where the social and emotional needs of the individual are crucial in determining the number of social contacts (Lansford et al. 1998).

The four theories discussed in this section are related to social participation and aging. Although the disengagement theory, activity theory, continuity theory and socioemotional selectivity theory differ in their own stance, there is a common factor that highlights the reduction in social participation at later age. However, enhancing the social participation in later life is an important factor of successful aging that many older adults' value (Douglas et al. 2017). Therefore, in order to understand the social participation of older people in the UK, the next section explores the facts and figures of social participation of older people.

2.2.2 Facts and figures from the UK

This section provides the facts and figures available, which shows the social participation of older people in the online world. Promoting social participation for older people may lead to better health (Lee et al. 2008) and is an important factor of successful aging (Douglas et al. 2017). Figures reveal that 48% of older people are active in social activities in the local area in the UK (DEFRA 2011). However, this is less than the other age groups (DEFRA 2011) and makes only just nearly half of the older population.

In a survey conducted by DEFRA (2011), older people reported that they spend on an average of three and three-quarter hours a day watching TV. In that survey, 73% of older people said that they were involved in leisure activities and hobbies in the last two weeks and 76% of older people said that they are satisfied with their leisure activities and hobbies. Apart from leisure activities and hobbies, older people spent time in volunteering and thereby contributing resources to the society. 29.0% of older people in England have participated in volunteering in the last 12 months to June 2012. The average for all ages is 23.9% (Department of Culture, Media and Sport 2014). All these figures are reported in the Age UK's 'Later life in the UK' document, updated in 2017, although the figures were calculated in 2011 and 2014 respectively. It is to be noted that there might be changes in the situation of social participation of older people in the UK since then.

The data from a longitudinal study conducted by Jivraj et al. (2012) by taking the Evidence from the English Longitudinal Study of Aging 2002-2010 (ELSA) identified that majority of older people are not detached or isolated from social activities. In their study, they have demonstrated four domains of participation. They are the civic participation (this involves participation in political, religious and volunteering activities), leisure activities, cultural engagement and social networks. However, they identified that 20% of older people are isolated from the 3 or more domains of participation, 50% from civic and leisure activities, and 5% from social networks. Their study stressed the importance of social participation in different domains in later life.

However, their study concluded that social detachment from the activities in later life is a substantial part of the aging process. Although they state that aging is not only about an increase of social detachment but includes an increase in the opportunity for participating in

different social activities. Reduction of social networks and the reduction of participation in social activities or social disengagement was predominantly explained in the literature by the socioemotional selectivity theory, which proposes that, in old age, changes occur in the social network, family structure, work and leisure relations, and especially in social roles, where people will modify their networks and relationship in their later age to a more meaningful and preserving way that improves their emotional well-being (Pinto and Neri 2017; Carstensen et al . 1999).

The latest available figures show that almost half of older people in the UK are participating in one or another activities in the community, whereas a similar proportion of the population are not actively participating in social activities outside (Age UK 2017). The further section discusses the benefits of social participation in the physical world in later life.

2.2.3 Benefits of social participation in the later age

Old age is a period of life-changing events such as changes in health, relocation or loss of family and friends, alterations in daily routines, retirement, age-related disability, and changes in socioeconomic status (Silva et al. 2015; Zaidi 2014). There is a greater challenge for older people to find personal meaning in the face of all these life-changing events in their later life. Therefore, meaningful social participation is important in maintaining interest in life, and it enhances well-being for older people (Novek et al. 2013; Eakman et al. 2010).

Successful aging, healthy aging and active aging are some of the frameworks discussed earlier in the introduction chapter and these frameworks were developed to enable people to live well in their later years. Social participation is an important factor of all these frameworks. Many studies provided supportive evidence of benefits of social participation. Enhancing social participation is important to age successfully. A narrative review conducted by (Douglas et al. 2017) to explore social participation as an indicator of successful aging and its association with health identified social participation is important for older people and is positively associated with physical and mental health. This study reported that targeting social participation may provide opportunities to improve the general health and contribution of older people to society. Other studies, like the one conducted by Lewis (2014), have identified the association of social participation and successful aging. Some other studies have reported that meaningful social participation is an important factor for active aging (Litwin et al. 2014;

Bowling et al. 2008). Due to the benefits of social participation in later life, it is integrated into research and policy frameworks of aging. The main benefits of social participation are discussed below.

Social participation has a positive effect on the overall health of older people. Several studies have established the positive effect of social participation and health in older people (Lee et al. 2008; Nummela et al. 2008; Nagarkar & Kulkarni 2015; Takeuchi et al. 2013; Berkman 2000; Douglas et al. 2017). For example, in a longitudinal study conducted by Leone & Hessel (2016) using SHARE (Survey of Health Aging & Retirement in Europe), data identified that social participation has an association with subjective and objective health of older people. This study reported that continuation in existing activities and taking up new activities improved the self-rated health in people aged above 50+.

In another study conducted by Gilmour (2012) among Canadian seniors, it identified positive association between social participation and self-rated health in both men and women. Another example, a quasi-experimental intervention study conducted by Ichida et al. (2013) among 158 participants with 1,391 non-participants for social participation in a Salon program (senior centre program) in Japan, identified a positive correlation of social participation and self-rated health in older people. There are rich evidences to support the positive association of social participation and health. However, another study conducted by Vogelsang (2016) argued that social participation and health vary by the type of activity that older people participate in and will be different in a rural-urban context.

Another notable association of social participation is with mental health in older people. Many studies identified a positive effect of social participation and mental health (Takagi et al. 2013; Umberson and Montez 2010; Chiao et al. 2011; Tomioka et al. 2017). For example, in a longitudinal study conducted by Fiorillo et al. (2017) from British Household Panel survey, it identified that being a member and active in associations that facilitate social participation has a positive effect on psychological health.

Furthermore, the benefits of social participation are shown to include better sleep (Chen et al. 2016), reduce motor function decline (Buchman et al. 2009), reduce loneliness and social isolation (Newall et al. 2009; Cattan et al. 2005), reduce depression (Glass et al. 2006; Fiori et al. 2006), increase mobility (James et al. 2011; Lund et al. 2010), reduce the risk of mortality

(Chiao et al. 2011), improve cognitive function (Lee & Kim 2016; Engelhardt et al. 2010) and reduce the risk of developing dementia (Dartigues et al. 2013; Foubert-Saimier et al. 2012).

Moreover, social participation is always remarked upon as an important factor to enhance overall well-being in older people. Several studies identified the association of social participation and well-being in older adults. For example, Anaby et al. (2011) conducted a study by completing questionnaires from 200 older participants with chronic conditions and identified that participation in both social and daily activities has a positive effect on the well-being of older adults. However, the study reported that satisfaction with participation rather than the accomplishment of activities was important for the participants. Therefore, engaging in meaningful activities are important for older people.

Another study conducted by Huxhold et al. (2014) showed activities with friends are more important for older people than families. This study reported that for older people, engaging in family activities increased both positive affect and negative affect and were unrelated to changes in life satisfaction, but activities with friends increased positive affect and life satisfaction and decreased negative affect. The data was drawn from the German Aging Survey (DEAS), an ongoing population-based, representative survey of community-dwelling individuals in Germany. Therefore, the study concluded that meaningful social activities with friends may become more important and may act as a buffer against negative effects of aging for older people.

Furthermore, many other studies have identified effects of different social participation interventions on older people. For example, a study conducted by Wilmouth et al. (2014) identified that religious participation is a significant predictor of subjective well-being in older people. This study was conducted by 1,025 telephone interviews with individuals over 55 years. Another study conducted by Tang et al. (2010) identified that the psychological well-being of older adults can be enhanced through meaningful volunteer activities and contribution to the society. Earlier, Morrow-Howell et al. (2003) identified that people spending hours in volunteering report higher levels of well-being.

Furthermore, social participation helps to address the challenges raised by an aging population such as social care cost. The main social care cost of the older population is due to their admissions to residential and nursing care homes (Bowling 2009; Windle et al. 2011).

Participation in different social activities in the community may delay the onset of the dependence associated with ageing (Rubio et al. 2009). There is evidence that supports the significance of social participation in older people to improve their independence and capability to carry out their daily living activities, which could help them to live independently in their own homes and reduce the social care cost.

One such research was conducted by James et al. (2011), and their study suggested that social activity is related to decreased risk of incident disability in community-dwelling older adults. This study was conducted with 954 persons without baseline disability from Rush Memory and Aging Project. Results showed that the risks of developing disability for performing daily living activities were decreased by 43% for each additional social activity. Moreover, the study identified that actively participating in social activities can decrease the risk of developing mobility disability and disability in instrumental activities of daily living.

A study conducted by Tomioko et al. (2016) identified that social participation in group activities could improve the independence in performing instrumental activities of daily living in the older people living in their own homes, regardless of gender. The data was collected from 14,956 respondents living in Japan who were over 65 years old. However, the beneficial effects of frequent participation on instrumental activities of daily living (IADL) may be prominent for females than for males.

The studies discussed above shows the benefits of participating in different social activities for older people. However, there are a few downsides to it too. Too much social participation has a positive correlation with mental distress. It is suggested that it may cause additional obligations in an already stressful daily life of an older adult, resulting in a negative association between social participation and mental health (Murayama et al. 2015). Some studies also identified that frequent, obligatory and vigorous social participation could negatively affect older adults (Tomioka et al. 2017; Takeuchi et al. 2013). However, the benefits of social participation outweigh its downside. Overloading with lots of activities and attending activities for obligation may have negative results but voluntarily participating in activities that provide self-satisfaction are positively related to the well-being of the older people (Tomioka et al. 2017). Therefore, meaningful social participation is important for older people for active and successful aging.

The existing literature shows that social participation is important to lead an active life at the later age. It helps older people to stay healthy, improve well-being, lead an active life, and enjoy more independence, enhanced life expectancy and better cognitive function. Therefore, improving the opportunities for social participation for older people will help them to lead an active later life. However, the latest figures showed that only almost half of the older people in the UK are participating in one or the other activities in the community, whereas a large population is not active (Age UK 2017). Therefore, it is important to know the factors affecting social participation at a later age and is discussed in the next section.

2.2.4 Factors affecting the social participation in later age

Social participation seems to decrease by age (Desrosiers et al. 2004; Lee et al. 2008), and the figures show that nearly half of the older population in the UK are not socially active (Age UK 2017). Several factors contribute to social participation or act as a barrier for social participation of older people. They are mainly environmental factors, disability, health factors, personal characteristics, psychological factors and socioeconomic status. This section reviews the relevant literature regarding the factors contributing to social participation.

Physical environment creates an obstacle to social participation in later life in some cases. For example, the study conducted by Levasseur et al. (2008) identified that activity level was limited, participation level was restricted, and the physical environment was perceived as having more obstacles in older age. Moreover, several other environmental factors are associated with social participation in older people. A systematic review was conducted to identify the association of environment in community participation of older adults (Vaughan et al. 2016), which grouped the factors such as neighbourhood, social support, land-use diversity, transportation, civil protection and street connectivity/walkability as contributing to the community participation of older people.

Another study identified that transportation use in the community-dwelling older adults is associated with their social participation. Drivers, public transport users, and walkers had a higher participation level compared to passengers and adapted transport/taxi users (Dahan-Oliel et al. 2010). Furthermore, the literature review conducted by Levasseur et al. (2015 a) selected 50 articles and mostly the cross-sectional studies identified that proximity to

resources and recreational facilities contribute to social participation, along with social support, transport, and neighbourhood security.

Moreover, another research conducted by Levasseur et al. (2015 b) identified that social participation did not differ across living areas, whether it be metropolitan, urban or rural areas. The data was collected from seniors living in Canada in different areas. However, this study reported that there are specific environmental variables that are associated with the social participation of older people. In metropolitan areas, higher social participation is associated with greater proximity to neighbourhood resources such as having a driver's license, transit use, and better-quality social network. In urban areas, higher social participation was associated with greater proximity to neighbourhood resources and having a driver's license. Finally, in rural areas, higher social participation was associated with greater access to key resources such as having a driver's license, children living in the neighbourhood, and more years lived in the same area. Furthermore, other studies have reported neighbourhood resources are associated with the social participation of older people (Richard et al. 2012) and transit use and walking as potential mediators of association for social participation in older people (Julien et al. 2015). Therefore, adjusting the physical environment and providing more resources and accessibility can improve the social participation in the older population.

Another important factor contributing to the social participation of older people are health and disabilities. Aging resulted in an increased risk of chronic diseases and disability in older people. Several studies identified that health and disabilities result in participation limitations of older people. For example, the study conducted by Raymond and Grenier (2014) identified that disabilities restrict the social participation in the elderly. This study used the data from a Photo-Novel project and concludes with an urge to policymakers to make social participation inclusive of older people with disabilities. Their result revealed that self-determination, inclusive environments and identity integration are leading apprehensions for social participation of older people with disabilities.

Another study, conducted by Wilkie et al. (2006), identified that participation restriction increases with age and is more frequent in women. Their study was conducted using survey-based questionnaires from 11,055 people above the age of 50 living in North Staffordshire,

United Kingdom. Their study concluded that some restriction of participation "as and when we want it" is common in the general population and increases with age. This study identified impairment and activity limitations are the two main barriers to participation. In this study, women reported more restriction in participation than men. However, this study identified the participation restriction in all activities and not specifically social activities.

Moreover, a study conducted by Lavasseur et al. (2011) investigated the association between perceived proximity to neighbourhood resources, disability and social participation among community-dwelling older adults. The result of the study showed a greater perceived proximity to resources and lower level of disability were associated with greater social participation for both men and women. The association between disability and social participation did not vary as a function of perceived proximity to neighborhood resources in women. However, in men, greater perceived proximity to neighbourhood resources enhanced social participation.

Sensory loss and mobility impairments also restrict social participation in old age. For example, a quantitative study conducted by Viljanen et al. (2014) also identified that sensory loss reduces social participation in the older European population. However, this study concluded that the association between sensory difficulties and social inequalities differed in different European countries. Another mixed methods study conducted by Sundar et al. (2016) identified that individuals with mobility impairments experience limitations in participating in community activities. Their study evidenced that health and function have an impact on the social participation of older people. Furthermore, several other health factors also affects the social participation of the older people such as stroke (Wolf et al. 2012), BMI or obesity (Zettel-Watson and Britton 2008), joint pain (Wilkie et al. 2007), joint contractures (Muller et al. 2013), and other medical conditions like HIV (Seimon et al. 2013).

Along with environmental factors, health and disabilities, personal characteristics also play another important role in the social participation of older people. Evidence suggests that people who led a healthy lifestyle and active social life in their middle age will lead an active social life at a later age. The activities show a transition from mid-age to old age. Low activity in mid-age results in more disability in old age, which restricts social participation in old age

(McPhee 2016). A longitudinal study identified 34 trajectories of social activity transited from mid-age to old age, and it affects late-life disability (Agahi et al. 2013).

Several intrinsic factors contribute to social participation at a later age. For example, community belonging, and resilience were associated with the greater social participation among men and women (Levasseur et al. 2017). Another study, conducted by Papageorgiou et al. (2016), identified that intrinsic factors such as developing or maintaining strong relationships and developing interests were identified as important factors enabling community participation, whereas resources and the environment are the barriers. Moreover, perceived importance is an important factor of social participation among visually impaired older people (Alma et al. 2012). Furthermore, personal conditions, such as socioeconomic and health status were predictors of low social participation in older adults (Pinto & Neri 2017).

Other factors such as interest, gender, age, marital status, health and financial stabilities affect social participation. A study conducted by Chen & Gao (2013) among Chinese older population identified that social participation depends on the gender, age, marital status, health and financial stabilities of the Chinese elderly. Their study used the data from the surveys conducted by the National Scientific Research Centre on Aging and the Beijing Office of Aging to assess basic demographics and monitor changes over time in China. Furthermore, other personal characteristics contribute to the social participation of the older people. For example, the study conducted by Jones & Heley (2016) identified the diversity of population; personal choice and willingness to participate affect social participation in the rural area. This study mainly looked into the volunteering activity.

Another study identified physical environment along with personal characteristics contribute to social participation in older people. This research was carried out by (Zeigler 2012) among the older population in the UK and emphasizes the importance of social participation in later life. In her study, she explains social participation as an important discourse of active aging. This study was an intersectional life course analysis and identified that the patterns of the participation depend on the social identities such as age, class, and gender. Moreover, in her study, the participants valued the spaces that help them to improve the social participation of older people. She argues that more resources are required to support the venues for social

participation of older people, which is meaningful for them. However, this study was a case study conducted by interviewing two participants living in the same ward in Manchester.

Another important factor contributing to social participation of older people is psychological factors. For example, the study conducted by Takahasi et al. (2016) identified that psychological factors such as desire, willingness, confidence and motivation all contribute to social participation, along with the other personal factors. Another psychological factor contributing to the social participation of older people is self-efficacy. Self-efficacy, directly and indirectly, influences the participation frequency in a community dwelling. This study was conducted among the sample population of manual wheelchair users aged 50 years or older (Sakakibara et al. 2014). Furthermore, social participation is associated with self-reported interests, health status, and levels of cognitive skills of older people living in long-term care (Li et al. 2010).

Finally, socioeconomic status also contributes to social participation of older people. For example, a study conducted by Ashida et al. (2016) reported that socio-economic status affects the social participation of the older people. This study used the data from 'Jager' Cohort study in Japan and identified the role of socioeconomic status in the social participation of older people. Another study, conducted by Niedzweidz et al. (2016), identified the risk of loneliness was high at least in wealthy people and frequent social participation is associated with a lower risk of loneliness. This study concluded that external social activities reduce loneliness among older people and act as a buffer against the effects of socioeconomic status disadvantage.

However, a study conducted by Jones & Heley (2014) in the Welsh older population identified finance from the supporting services as the most imminent barriers for social participation, and the study reported that financial cuts in the local communities has reduced the infrastructures for social activities for older people. This case study was conducted in two Welsh rural villages and interviews were the method of collecting data. Moreover, linguistic barriers were also identified in this study. The participants also raised concerns about the rising cost of living and a change in their income due to retirement has reduced their leisure activities. Therefore, important factors discussed above are factors affecting social participation of older people. The main factors discussed were environmental factors,

disability, health factors, personal characteristics, psychological factors and socioeconomic status. Adjusting these factors could improve social participation in older people.

Social participation is an important factor in enhancing well-being for older people. However, social participation seems to decrease by age. Enormous benefits of social participation in the later ages was discussed, along with several factors affecting social participation in later life. However, during the last few decades, we have witnessed tremendous change in technology that provided more opportunities for older people to participate in different social activities. Therefore, the next section discusses social participation in the new platform, termed as the online world in this study.

2.3 Social participation in the online world

This section of the chapter is divided into 4 sub-sections. The first sub-section discusses the online world and its evolution in the past few decades. The next sub-section explores older people in the online world. This involves the current figures of involvement of older people in the online world. The third sub-section explores the opportunities of online world usage, the benefits of using the online world, followed by the identified barriers. The final sub-section discusses the perception of older people about their online world usage and the perception of older people about their online world social participation.

2.3.1 Online world

As discussed in the introduction chapter, like any other 'world', the online world is a subjective space created by the internet. The communication and interaction can be synchronous or asynchronous in the online world, and people can spend time actively interacting or passively exploring the information using the internet. There are 4 components that contribute to the formation of this self-contained subjective space called the 'online world'. They are the internet, devices, interfaces and human users.

In the past two decades, there was a rapid change in these components, which led to the change in the way people communicate, take part in different activities, entertain, play, work, gather and update information. Moreover, the online world provided a new platform to express people's views from anywhere in the world. The next section discusses the rapid progression of the online world and its implications on older people.

2.3.2 Rapid progression of the online world

We can with no doubt acknowledge that the internet and the related technologies have changed rapidly in the last two decades. These technologies have enormously changed lives and the way people communicate and interact with each other. Moreover, they have changed the world that people are living in by creating vast opportunities for people to interact and participate in different activities (French & Shim 2016; Colley & Maltby 2007).

Several factors contributed to the progression of the online world in the last two decades. The advancement in telecommunication, electricity along with the personal computers and other devices, network and communication protocols, wireless technology, fibre optics and the World Wide Web contributed for the progression of the online world (Heddeghem et al. 2014). However, the digital revolution is moving forward every day with new innovations in the ocean of technology with Internet of Things, 5G, artificial intelligence and so on (French & Shim 2016).

Within the scope of the online world in this study, the advancement in devices, the internet, interface and its effect on the human users are discussed in the next section. It is observed that there has been a rapid progression of technology since 1991 by the introduction of the World Wide Web in the public domain other than the academia, defence and core businesses (Ramasubramanian 2008). To understand this rapid progression of technology since 1991, it is obvious to know the important innovations and progressions in the technological field since then. It is always important to investigate the history of the technological innovations to understand where we are now in this rapid pace of changing technology.

2.3.2.1 Advancement of the internet:

2.3.2.1.1 *Transition from few slow wired connections to fast million wireless connections*

As we know, the internet was not invented in a day or two. It took years to invent inter-networking, and several stories of inventions exist. However, this study is interested in understanding the major discoveries that led to the modern online world, which is the result of the evolution of the internet from a few wired slow connections to the millions of fast wireless connections.

The internet is a global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardised

communication protocols (Ramasubramanian 2008). The first form of the internet was developed in 1969, which is called as 'ARPANET' by the Advanced Research Projects Agency. ARPANET is a single network that connected a few dozen sites (Abbate 1999). Since then, several forms of networking and information exchange have started in different parts of the world, especially in academia, defence and other core businesses (Kleinrock 2010; Ramasubramanian 2008).

Later, in the 1970s, a packet switching technique was adopted, leading to the innovation of ALOHANET. Initially, this was used to link the computers and transmit data as packets within the University of Hawaii's seven campuses and other research institutes to the main computer centre. The ALOHANET design used two radio channels for sending and receiving information. In 1972, the ETHERNET was developed, which used cables to send and receive information instead of channels and used a revised algorithm employed for the ALOHANET. Later, the Ethernet became a fast and efficient means of networking and became a standard technique for local area networking by 1990 (Ramasubramanian 2008).

On the other hand, in 1973, the Transmission Control Protocol (TCP) was developed for an orderly, error-free flow of data from the host to host, and gateways are used to physically connect the hosts. ARPANET, following ALOHANET, developed a packet-switching network, PRNET, a system that consisted of a control station, several broadcast nodes and a multitude of radio sets that could be attached to computers or terminals. Due to the advancement in satellite communication, in 1975, Kahn, one of the pioneers of ARPANET, started working on the SATNET project (Ramasubramanian 2008).

By the mid-1970s, ARPA was operating three networks: ARPANET, PRNET, and SATNET. The idea of connecting these different networks led to the innovation of modern INTERNET. After many revisions and testing in 1977, the first multi-network connection was demonstrated by ARPA by sending packets from PRNET to ARPANET, from ARPANET to SATNET, from SATNET to a collaborator network in Europe, and finally back to ARPANET. Kahn & Cerf were the pioneer architects of the internet and had some collaborators from all over the world. Later, in 1978, the TCP is divided into two parts: a host to host protocol (TCP) and an internetwork protocol (IP). In 1983, ARPANET converted its core networking protocol to TCP/IP, replacing Networking Control Protocol, and marked the starting of the modern internet. Moreover, in

1983, the first commercial cellular system begins operating in Chicago (Ramasubramanian 2008).

As academic and research communities were creating a network for scientific, defence and academic purposes, on the other hand, a lot of parallel activities were happening elsewhere in the commercial sector to connect to the internet. It led to a security threat to ARPANET. Haughney, one of the Directors of ARPANET, warned ARPANET host managers that the "advent of low-cost home computer systems had subjected the ARPANET to increased probing by the computer freaks" (Ramasubramanian 2008).

Meanwhile, TCP/IP was standardised to connect all the networks to support internetworking routing. It led to an increased number of networks connected and thereby aroused a need for a name server database of hostnames. As a result, in 1984, Domain Name System was established to keep track of the hostnames. Invention of Domain Name System (DNS) expanded the internet beyond defence and academic origins (Ramasubramanian 2008).

Due to the main concerns about the security of ARPANET, a new network called MILNET was introduced and MILNET, which is a part of ARPANET, handled the military operations, whereas ARPANET remained as research-oriented networks dominated by the universities. It opened a route to transfer the internetworking to the public. Later, a step was taken by the ARPA to commercialise the internet by funding computer manufacturers to implement TCP/IP in their machines. It was a great opportunity for the computer manufacturers and by 1990, TCP/IP was available to every computer in the market. It is considered that the development of the Ethernet and commercialisation of the TCP/IP were the two milestones that led to the emergence of a worldwide accessible internet in the late 1980s (Ramasubramanian 2008).

Innovations leading into the usage of wireless technology to connect the computers and devices over the internet was a breakthrough for the history of the internet. Wi-Fi is a wireless networking technology that is used in devices like computers, mobile phones, iPads, game consoles and other technological devices to communicate over a wireless signal. Vic Hayes created the standard for wireless communication, 802.11, and this was established in 1997 for public use. It is widely used to connect devices. This led to the transition of the internet from complicated wires and limited accessibility to the socket points to a wireless connection with Wi-Fi hotspots all over the world (Ramasubramanian 2008).

Therefore, the transition of the internet from a single slow network with few computers used for defence and academia to a commercialised fast million connections capable of connecting as many devices enabled people to access fast and easy connections. The advancement of the internet is remarkable and is not standalone. There are parallel innovations in computer devices and applications that helped people to establish their presence in the online world.

2.3.2.2 Advancement of computer devices:

2.3.2.2.1 *Transition of devices occupying a room to our pockets*

Computers were evolved from a calculator, and the first form of personal computers was introduced in the 1970s. The invention of computers as it is in the form now has been influenced by the innovation and evolution of the processors, memory and other built-in programs. When considering the history of computers, it is obvious to consider the five-generation classification of computers (Grier & Alan 2007).

First-generation computers (1940-1956) used vacuum tube circuits and magnetic drums for memory. They were operated on machine languages and used punch cards and paper tapes as input devices, whereas output was printouts. ENIAC and UNIVAC are the examples of the first-generation computers. Vacuum tubes were replaced by transistors in second-generation computers (1956-1963). They were operated on assembly language and used punch cards and paper tapes as input devices, whereas printouts as output (Staley 2014).

However, third-generation computers (1964-1971) used semiconductor integrated circuits to replace the transistors. Keyboards were used as the input devices, whereas monitors are used as output devices along with printouts. Fourth-generation computers (1972-present) use a single ‘chip’ to incorporate all computer components such as CPU, memory, input and output controls.

There is much evolution for the fourth-generation computers. IBM introduced its first computer for the home user in 1981, and in 1984, Apple introduced the Macintosh. Fourth-generation computers used the GUIs, mouse and handheld devices. There were several innovations from Apple in computers reaching to iPhone, iPod and iPad, whereas IBM and other market competitors developed computers, tablets and attractive smartphones. Fifth-generation computers are the devices with artificial intelligence using superconductors and are evolving to be capable of processing natural languages (Staley 2014).

Meanwhile, the operating system also evolved in due course. The first portable computer was launched in 1981, followed by the personal computers with the Microsoft's 16-bit operating system (MS-DOS 1.0). In 1983, Windows developed a user-friendly operating system. Similarly, Apple developed a user-friendly operating system, 'Apple Macintosh', after evolving from 'Apple LISA'. By the late 1980s, competition in the market in all areas like devices, operating system, memory, and processor tightened, leading to the fast growth of computers. This competition leads to the development of devices capable of fast processing, more memory capacity and being user-friendly (Ramasubramanian 2008). These computer devices are evolving to become smaller and smaller, fitting into our pockets from very large computers that were fitted in a room.

Therefore, the transition of computers occupying the whole room with tonnes of weight to small, light, handheld devices like tablets and smartphones, capable of fitting into our pockets, may have contributed to the higher usage of technology in our daily lives.

2.3.2.3 Advancement of Applications:

2.3.2.3.1 *Transition from complicated coding to simple emojis*

Email is considered the most important application of the internet. It was evolved from early message depositing in directories to email sending to different computers in the network using '@' in 1972. Later, commercial packages for email started to hit the ground due to the advancement of the internet (Ramasubramanian 2008).

When the number of websites on the internet was small, it was easy to keep track of the sites and resources. However, in the 1980s the number of websites has increased. Therefore, efforts have been taken to create a catalogue to keep track of the sites and resources and provide information about the resources. Tim Berners-Lee invented the World Wide Web in 1989, which is an open source information space where different websites and resources were identified by specific URLs (Uniform Resource Identifier), interlinked by the hypertext, and can be accessed by the internet using the Hypertext Transfer Protocol. Later, in 1991, the World Wide Web became public. It was one of the greatest breakthroughs in the progression of the online world (Campbell-Kelly & Garcia-Swartz 2013).

The websites in the early 1990s were Web 1.0 sites and were relatively used to push information to passive readers in a similar way to newspaper and books. The content creators

of these websites are designated people, appointed by the owners. The websites were not interactive at all so the users who accessed the website did not participate or contribute to the websites.

In 2004, the first Web 2.0 Conference was held, which outlined the concept 'Web as a platform', where software applications are built upon the web rather than on the desktop. Moreover, Web 2.0 provided opportunities for users to generate content and interact in the online world. In 2005, Tim O'Reilly defined Web 2.0. Web 2.0 denotes several different concepts but doesn't have a hard boundary. Web 2.0 is a "set of principles and practices that tie together a veritable solar system of sites that demonstrate some or all of these principles at a varying distance from that of the core" (O'Reilly 2007). Web 2.0 included websites that are based on a particular set of technologies such as AJAX or having a strong social component involving user profiles, friend links, websites that support user-generated contents like comments, pictures, post and videos (O'Reilly 2007; Boateng et al. 2014). The invention of the dynamic, interactive web, also termed as Web 2.0, attracted more people to the online world.

Therefore, this dynamic, interactive web enabled users to input content but not in complicated codes; instead, people could express their views in a natural language and even as simple 'emoji' icons to express their feelings and views. Moreover, many more applications are developed on a day to day basis to support people in all their daily activities. Therefore, it is to be noted that the transition from complicated coding to the use of easy 'emojis' enabled effortless access to the online world for its users. The applications developed provided user-friendly access and had definitely attracted more people to the online world.

2.3.2.4 Human Users:

2.3.2.4.1 *Transition from passive to active users*

The rapid progression of the technology in the past few years witnessed a large increase in the number of human technology users. The role of users has transitioned from passive to active, as they can add content and express their views in the online world. This was possible with the transition of the internet from slow-wired connection to fast wireless connection that provided portability and convenience for the users, the transition of large computers requiring specialist knowledge users to operate to small, lightweight, handheld devices that need minimal knowledge for users to operate improved the portability and attracted more

human users to the online world. Moreover, the transition of applications from complicated coding by specialist developers to adding personalised contents, even as simple as 'emojis' and innovations of compatible applications capable of entertaining, informing and participating attracted more and more human users to use the online world.

No doubt there has been rapid progression in technology in the last two decades, resulting in transition of human users from passive participation in the online world to active participation. The transition of users from passive role to an active user has embarked a change in the lifestyle of people around the world. Therefore, it is apparent that the four components of the online world identified in this study have undergone rapid progression in the past few decades. The next section discusses the changes of this rapid progression of technology in the lives of older people.

2.3.3 Older people in the online world

The innovations in technology as discussed above changed the way people communicate, take part in different activities, express their views, entertain, play, work and seek information. However, usage of the online world differs throughout the world. The difference in the usage of the online world is mainly projected based on regions and age groups. In this study, the usage of the online world by older age groups are explored. As this study focuses on the online world usage of older people in the UK, in the next section, the facts and figures of older online world users are discussed. This helps us to provide an understanding about the usage of the online world by the older age group in the UK.

2.3.4 Facts and Figures from the UK

The annual estimates for the internet users in the UK commenced in 2006 by the Office for National Statistics (ONS). Therefore, this study analyses the trends of the older online users in the UK from 2006. This study initially investigated the overall adult online world users in the UK, irrespective of age, to provide a bigger picture of the online world users before heading to focus on the 65+ age group. According to the ONS (2016) statistics, 82% of adults in the UK aged 16 or above used the internet daily or almost daily in 2016, whereas, in contrast, only 35% of the UK population used the internet in 2006.

2.3.4.1 Comparison of the online world overall adult users vs older users in the UK from 2006-2016

In 2006, 35% of the population were using the internet in the UK, whereas only 9% of older people used the internet in the UK in 2006. In 2007, there was a steep increase in the number of online world users, reaching 45% of the total UK adult population. In 2007, 24% of older people aged 65+ came online at least once in three months' time, followed by 26% and 30% in 2008 and 2009 respectively. By 2008, about half of the UK adult population started using the internet. In 2009, 55% of the UK population used the online world, which was increased by 5% in 2010, followed by 4% in 2011, reaching up to 64% of the total population. However, notably, very few older people came online in the consecutive years until 2015. 32% of the older people above 65 used the internet in 2010, 34% in 2011, 35% in 2012, and 37% in 2013. In 2014, 42% of older people became an online world user, while 45% used the online world once in 2015, followed by 64% in 2016 (ONS 2016).

On the other hand, in 2012, 68% of the population was using the online world. By 2013, overall adult users were increased to 73%, followed by 76% in 2014, and 78% in 2015, and reaching up to 82% in 2016. The graph below shows the number of online users in the UK from 2006 to 2016 (ONS 2016).

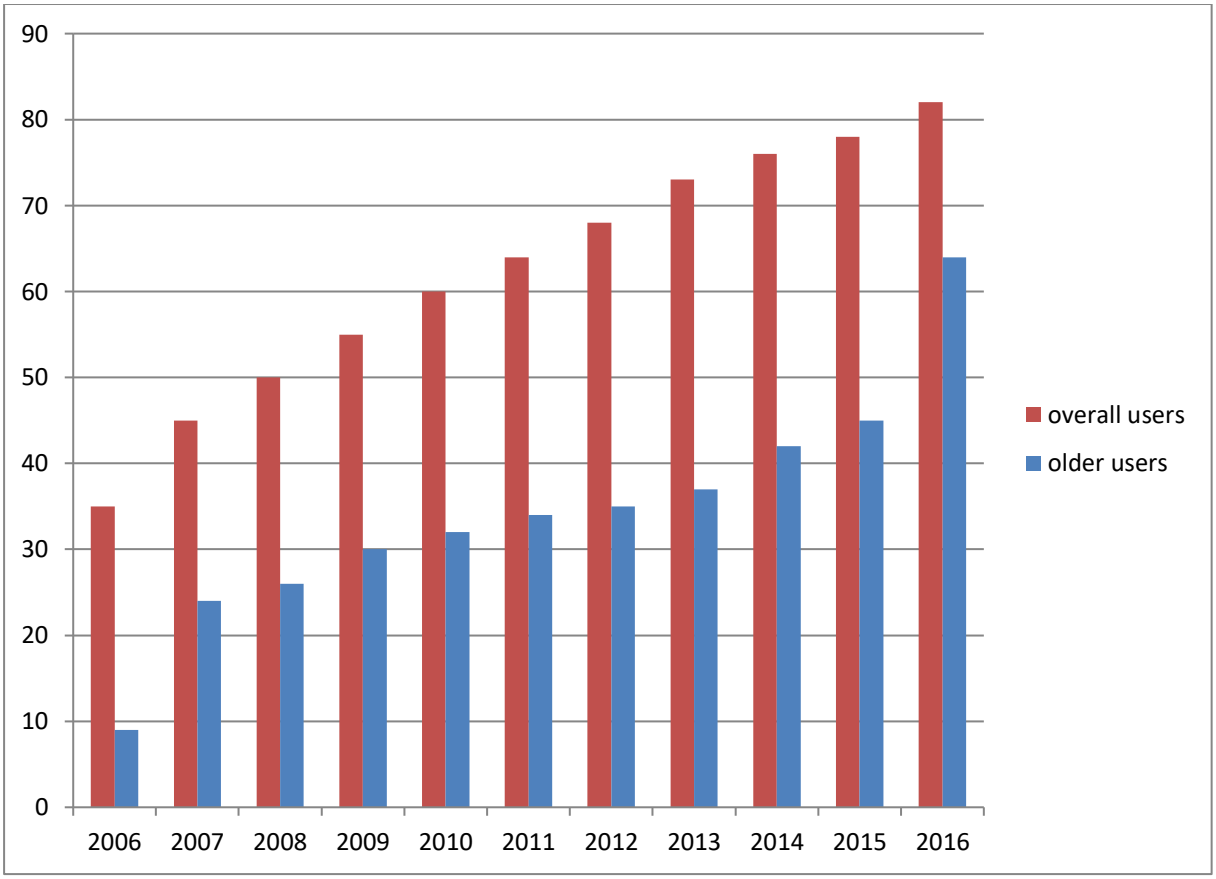

Figure 4. Yearly increase in overall online world users and older users in the UK (Source: ONS (2016))

The national figures of the UK show that there is a lower degree of technology adoption and usage by older adults in the UK compared to the other age groups. According to the Statistician's quote, "While we have seen a notable increase in internet usage across all groups in recent years, many older and disabled people are still not online, with two-thirds of women over 75 having never used the internet" (ONS 2016). However, there was a rapid increase in the number of older online world users in 2016. According to the ONS (2016), around 64% of people aged 65+ are using the online world, which was a tremendous increase compared to 9% in 2006. Moreover, this is a steep increase in the online world older users from 2015 (42%) to 2016 (64%).

Although, the statistics show that 64% of the older population have used the internet, which does not clearly mean that they are using it on a day to day basis or frequently according to their needs. The ONS collects this data from the labour force survey, which aims to ask the questions with answering options "Used the internet in the last three months" or "Used the internet but not in the last three months" or "Never used" to collect the information regarding

the internet usage (ONS 2016). Therefore, these figures do not completely reflect the usage of internet on a daily or weekly basis. However, there are many opportunities and identified benefits of using the internet for older people. The next section discusses the main opportunities of using the online world for older people.

2.3.5 Opportunities of the online world

As illustrated in the previous section, there is an increase in the number of older users in the online world, and opportunities for participation in the online world are enormous. As this study focuses on the social participation of older people in the online world, the opportunities that facilitate social participation are given importance and discussed below. The main opportunities involve communication, support groups, information seeking, internet banking, online shopping, entertainment and social networking.

As discussed in the introduction chapter, the first element of social participation is social contact. The online world provides opportunities for social contact. Several studies have identified the communication opportunities using the online world and its benefits. For example, a study conducted by Gatto and Tak (2008) among 58 older people aged 60 years and above reported using email as a favourite way to connect with others by keeping in touch with family, and friends, reconnecting with old friends, or making new friends gave older adults a feeling of connectedness. Analysis of open-ended questions in their study indicated that the positive facets of internet use included connectedness, satisfaction, paying bills and other utilities, and a positive learning experience. However, participants also indicated some negative features of their internet use as frustration, functional limitations of old age, mistrust, and time issues. Furthermore, their study concluded that interventions to target the older population to use computers and the internet need to know the benefits and barriers of older people's computer use.

There are also many other studies that identified the opportunity of online world to improve social contacts in older people. A survey conducted by Pew Research Centre (2012) identified that email use as the bedrock of online communication for older people in the US. Additionally, online world also provides possibilities for synchronous (Eg: instant chat/calls) communication. Video calls were used in different studies among older people to facilitate communication with family and friends (Tsai et al. 2010; Banbury et al. 2017). Therefore,

previous studies identified that online world provides an opportunity for communication for older people.

Support groups for different purposes are available in the online world, designed specifically for different age groups. Support groups for older people in the online world allow opportunities for people to interact with other individuals coping with similar situations. Many studies investigated the impact of accessing online support groups for older people. For example, a study conducted by Pfeil et al. (2009) investigated the perception of 31 older people about the online support groups. In their study, participants reported that in some cases, such as light support and information sharing, they are comfortable in the online support groups. However, in other cases, such as deep support, building trust with an unknown person seems to be difficult for them. Moreover, the findings of their study show that online support groups provide opportunities to enhance their lives but require special care to address the needs and preferences of this age group.

In another study, Pfeil et al. (2010) investigated the sustainability of older people in the online support groups. Their study identified that the mutual exchange of personal information, sharing personal problems and receiving support on it are the basic factors contributing to the sustainability of the online community. However, in their study, it was noted that conversations that were not related to the participants' issues resulted in a decrease in the activity of the online support groups. However, support groups provide an opportunity for older people to seek support from the comfort of their own homes.

Information seeking is one of the significant opportunities of the online world. There is an increasing demand on receiving effective information, advice and advocacy service to meet the needs, independence and choice of older people (Department of Health 2006; Social Exclusion Unit 2006; Bernard 2007). Older people seek information about health, social services, and pension and welfare benefits, as well as other aspects of life, depending on individual benefits. This promotes the independence, rights, interests, and giving them more choices and control over their life (Godfrey and Johnson 2009). Health information-seeking is prevalent among older people, and many studies investigated the health-seeking behaviour of older people. For example, a study conducted by Medlock et al. (2015) reported that older people prefer online as a source to receive health information. Moreover, online health-

seeking provided confidence for older people with chronic conditions (Mayoh et al. 2011). Therefore, the online world provides opportunities for older people to seek relevant information that may promote their independence, interests and more control over their life.

Internet banking is another opportunity of the online world for older people. In research conducted by Arenas-Gaitan et al. (2015), it was identified that internet banking provides an opportunity for older people for managing their money without going to the bank and the ability to access their banking facilities 24 hours. Moreover, internet banking provides versatility, independence and the possibility of overcoming the physical barriers of age in accessing services. However, there is a lower adoption of online banking services by older people.

A survey research conducted by (Georgieva 2018) among older people aged 65+ in the UK showed 88% of respondents used traditional banking and 12% used online banking. Respondents identified the main reasons for using traditional banking were the need for human interaction, the need to be sociable, and the need to engage in an in-person communication to preserve cognitive functions. However, respondents of online banking identified ease of use and safety as dominant determining factors. Moreover, the main barriers for using online banking were identified as less experience, no trust in online banking, no support from family members, reliability of online banking and security issues. However, the advancement in technology resulted in overcoming barriers such as reliability and security issues. Moreover, older online banking users of her study identified it as easy and safe to use. Therefore, although internet banking provides an opportunity to access the banking facilities for older people, a lack of awareness of security and reliability may have contributed to the limited the use of internet banking by older people.

Online shopping is one of the most booming opportunities of older people. A study conducted by Lian and Yen (2014) among older people investigated online shopping behaviours of older people and identified that they have more barriers and less driving forces than younger online shoppers. They further investigated the barriers and drivers associated with the online shopping in older people. The main barriers for shopping online for older people include value, risk, and tradition, and the main driving forces are performance expectation and social

influence. However, online shopping provides an opportunity for older people to shop from the comfort of their home.

Entertainment is another opportunity for older people in the online world. Playing games, watching videos, leisure activities and listening to music are the most common entertainments in the online world. A study conducted by Nimrod et al. (2011) on the fun culture of seniors in the online world communities identified online social games as the most common leisure activity. Online social games involved games capable of enhancing cognition, association and creativity. Many studies suggest the importance and benefits of online games for older people (Torres 2008; Osmanovic and Pecchioni 2016; Salmon et al. 2017; Nguyena et al. 2017). Therefore, the online world provides opportunities for older people to entertain by playing games, watching videos and movies and listening to music.

Social networking sites are one of the important and popular innovations after the announcement of Web 2.0. There are many social networking sites for the general population and specially designed sites for the elderly. A report by Ofcom (2018) into the nation's online habits shows an increase in the number of older online users and an increase in number of older people signing into social networking sites like Facebook, compared to the previous years. A systematic review conducted by Nef et al. (2013) on social networking sites and older users identified that the main benefits of using social networking sites include entertainment and keeping in touch with family members. However, in their study, the main barriers identified in using social networking sites includes privacy concerns, technical difficulties and drawbacks of design. Their study concluded that by addressing these barriers carefully, these sites have the ability to support today's and tomorrow's communication between older and younger family members. Therefore, social networking sites also provide opportunities for older people to establish social contacts and entertain.

From the literature, it is clearly evident that the online world provides different opportunities for older people to maintain social contacts with family and friends, participate in different support groups, thereby contributing resources to the society and receiving resources, information-seeking, which are important for their lives, and perform banking and shopping from the comfort of their own homes, enjoyment and engage in leisure activities, and

establishing a profile in social networking sites for entertainment and social contacts. In the next section, the benefits of utilising these opportunities are discussed.

2.3.6 Benefits of using the online world

Several previous papers identified the benefits of using the online world for older adults. The main benefits identified are discussed in this section and involve improving quality of life of older people, improving health and well-being, improving connectedness with friends, family and community, achieving overall life satisfaction, improving cognition, and reducing the risk of dementia and mitigating loneliness and social isolation.

Exploring and making use of the opportunities of the online world will help older people to improve their quality of life. A review of literature conducted by Boz and Karatas (2015) on internet use and quality of life of the elderly identified that functional use of computers and internet improves the quality of life of older people. In their review, the improvement of quality of life was achieved by exploring the opportunities of the online world by maintaining and establishing social contacts and relationships, mitigating social isolation and loneliness, and improving overall health and well-being. Their study reviewed 25 articles since 1990, covering information and communication technologies, psychology, gerontology, health sciences, educational sciences, and social work disciplines.

Another phenomenological study conducted by Chattaraman et al. (2012) identified the positive effects of internet use on the quality of life of older people. The five dimensions such as social connectedness, source of information, enjoyment and entertainment, convenience, and health empowerment represented the positive effect on the quality of life of older people. However, the review, conducted by Damant et al. (2017), identified mixed results with the association of ICT use and the quality of life of older people. In different domains of quality of life of older people, ICT have positive and negative effects in their study. The evidence from their review demonstrated that the effects of ICT, for both mainstream and remote care purposes, on different domains of QOL can be both positive and negative, challenging common assumptions that ICT is unquestionably beneficial for older people. However, their study suggested that due to the rapid progression of digital technologies in recent years, the reviewed evidence may not fully reflect current reality. Moreover, their study suggested that ICT use can facilitate their participation in social networks and communities.

Another benefit of using the opportunities of the online world for older people is on the overall health and well-being of older people. A study conducted by Chopik (2016) investigated the associations of technology use for social purposes and its effect on physical and psychological health among older adults. Their study examined the benefits of using technology for social purposes in 591 older adults from the 2012 wave of the Health and Retirement Study. Positive association with technology use and self-rated health has been reported in their study. However, it was unclear in their study whether technology use envisages better physical and mental health or whether better physical and mental health predicts more technology use (or both) due to the lack of multiple waves of data on all variables.

Another study by Heo et al. (2015) investigated the influence of the internet on the well-being of older people. Data was used from a US Health and Retirement Study comprising of 5,203 older adults. The results showed that higher levels of internet use were substantial predictors of higher levels of social support, reduced loneliness, and better life satisfaction and psychological well-being among older adults. However, their study did not explore the details of internet use, such as the purpose, types of online activities or the devices used.

Another notable and prominent benefit of the online world is its opportunities for improving the social interaction and connectedness in older people. A descriptive study conducted by Gatto and Tak (2008) investigated the perceived benefits of using the internet among 58 older adults. The participants reported that benefits of using a computer and the internet included a sense of connectedness, utility, life satisfaction, and positive learning experiences. However, participants in their study identified many barriers to internet use, which hindered their participation in the online world.

Another remarkable benefit of online world usage is on the cognitive performance of older people. Cognitive function of the human brain seems to decrease with age, or some aspects of cognition seem to decline with age. It can lead to a condition called mild cognitive impairment, which is considered as an increased risk of developing dementia (Ray & Davidson 2014). However, positive effects of online use and cognition were identified in different studies (Torres 2008; Toril et al. 2014).

A study conducted by Ordonez et al. (2011) identified the positive effect of the digital inclusion program on the cognitive performance of older adults. In their study, there was an improvement in the experimental group's cognitive performance, particularly in the language and memory domains after the program. Another longitudinal study conducted among older people identified that internet or email usage may help to reduce cognitive decline (Xavier et al. 2014). Moreover, another study conducted by Zelinski and Reyes (2009) identified the positive effect of computer games in cognition. Furthermore, another study reported usage of a computer and the internet can lower the risk of diagnosing dementia in older men up to 8.5 years (Almeida et al. 2012).

Another benefit of the online world is mitigating social isolation and loneliness in older adults. It is a challenging topic related to the social life of older people. A study conducted by Choi et al. (2012) identified that computer and internet training can reduce the loneliness and social isolation in older people. Another study by Sum et al. (2008) identified that older people using the internet as a communication tool were less likely to feel loneliness. Moreover, several other studies on internet use and older people has proven to show the potential to reduce loneliness and social isolation in older people (Cotten et al. 2013; Blazun et al. 2012).

There are many studies identifying the benefits of online world usage by older people. However, online world use may have some negative consequences in older people. A review of existing literature conducted by M'hiri et al (2015) on problematic internet use in elder persons has identified no studies on subjects aged 60+ years. However, their study identified 3 studies including subjects entering old age (over 55 years old), which showed some Problematic Internet Use (PIU) being present in this subgroup population, but no further data was presented specifically for this age group. They suggested that a lack of data in old age about their PIU could be partly due to the novelty of this field.

However, making use of online world opportunities is significant for older people's quality of life, well-being and overall health, connectedness, cognitive performance, and reducing loneliness and isolation. Nevertheless, the older population always lagged the younger generations in the case of technology adoption. Several barriers were identified that hinder older people's online world usage. In the next section, the important barriers for older people to use the online world are discussed.

2.3.7 Barriers for using the online world

Evidence suggests that the online world provides opportunities for older people to communicate and participate in different activities and live an active later life. However, technology adoption was lagged by the older generation. This points to the debate of the adoption of internet and technology by older people which, was quoted as the 'digital grey divide' (Milliward 2003). Several studies argued over a period from 2003 until now that a digital grey divide exists with less adoption of technology by the older people (Morris 2007; Mubarak & Nycyk 2017). For example, another study conducted among older people living in Switzerland by Friemel (2016) identified that the digital divide has shifted to older people from younger generations. He concluded that the seniors over 70+ are excluded from the network. However, in a quantitative study conducted by Chang et al. (2015), among 567 people aged 60 or over living in South California identified that the digital divide has diminished but has not disappeared. Moreover, data of older people's internet use in the UK increased from 9% in 2006 to 64% in 2016 (ONS 2016) also demonstrated the shrinkage of digital divide.

Many previous studies have identified several barriers for the usage of the internet by older people. Initial practical issues to the internet users are the cost and access, as well as lack of knowledge about the web. According to Adams et al. (2005), in their research about the psychological barriers of the internet usage among older people in the UK, they identified that older people perceived the usage of the internet differently from younger generations, and the difficulties are accessing the internet, navigating through the internet, complexity of terminology, lack of skills and training. Lack of skills has been reported in other studies as an important barrier for older people to use the online world (Gitlow 2014). Another study reported technological inhibition, relying on others to access technology, lack of motivation, and lack of access as important barriers for using the internet or computers (Segrist 2004).

In a study conducted by Gatto & Tak (2008), they identified frustration, mistrust, functional limitations and time as the main barriers in using the internet by older people. However, it is to be noted that technology has changed a lot in the past few years, resulting in many new opportunities for connecting with each other, participating in different activities, and entertaining. Moreover, advancement in technology also could have solved some of the barriers identified in the early days. Their study was conducted among 58 older people aged from 59 to 85 years old. Other studies also reported computer-related anxiety and frustration

as a barrier for internet usage (Rosenthal 2008; Czaja et al. 2006). Furthermore, Sayago and Blat (2011) in their study identified functional limitation due to aging such as changes in vision, cognition, mobility and hearing has an obvious impact on accessibility of the internet.

Another foreseeable barrier identified is the continuous change in technology and applications, which has resulted in older people using older versions of applications. This leads to their computers running slowly and creates difficulty in accessing information (Cody et al. 1999). Digital Inclusion Evidence review (2018) by Age UK highlighted the importance of training for older people to access the internet and digitally include them to use the potential of internet.

In a study conducted by Chang et al. (2014), it was reported that the most frequently cited barrier to internet users was a lack of knowledge to use the internet and quoted the importance of having training. Additionally, the next most frequent barrier mentioned was mistrust of the internet. These findings suggest a strong need for making computer training classes or opportunities more available to older people to use internet safely. Moreover, a study by Minocha et al. (2015) identified that training is important to get older people online and recommended an evidence-based training initiative for older people in the UK. Furthermore, the European Commission (2007) i2010 initiative on e-Inclusion recommended the need for training programmes that are more relevant to older citizens.

Another study conducted by Heinz et al. (2013) identified that help and assistance are two important factors that affect technology usage of older people. Furthermore, Bernard et al. (2013) in their study identified that the availability of support contributes to the attitude of older people in using the online world. Another barrier to using the online world is the interest and perceived need (Peek et al. 2014). Melenhorst et al. (2006) conducted focus groups on non-internet older users and identified no perceived benefits or lack of interest as the main reason for not using internet. Another study supports this evidence that no interest in usage resulted in non-usage of internet (Carpenter and Boday 2007).

Furthermore, Wagner et al. (2010) reviewed literature on internet use in older adults and found lack of perceived benefit to be a major factor for internet non-usage. Moreover, reluctance to change was reported in a study conducted by Maier et al. (2011) as an important barrier for not using social networking sites. This study identified the preference of older

people to sustain their daily habits or routines, and the resistance to change these habits resulted in the non-adoption of social networking sites.

Although there are many barriers for using the online world by older people, there is an increase in the number of older online world users in the last few years. This was prevalent in the recent statistics report of Office for National Statistics. This may be due to the current progression of technology, resulting in lesser cost, easy accessibility, and many other barriers being addressed already by designers, researchers and government, and other organisations. Established internet users are gradually becoming older, so there will naturally be more of them using the online world. However, perceptions of older people about their online world usage are important to understand in view of these changes in the usage of online world in recent years. Moreover, the ever-evolving nature of technology means that the individuals need ever-increasing levels of digital literacy to maintain their inclusion. Therefore, understanding the perceptions of older people about their online world is imperative. The next section discusses the perceptions of older people about the online world.

2.3.8 Perceptions of older people about the online world

In the previous section, the ONS data presented that 9% of older people used the internet in 2006, in contrast to 64% in 2016. This shows a steep increase in the number of older adult users in the UK. This supports the statement that older adults make up the fastest-growing consumers of the internet in the opinion of Hart et al. (2008). The importance of technology adoption for older people to facilitate their daily life in the changing digital world attracted many researchers' interest. Therefore, a vast number of articles are out there under the topic of older adults and technology.

In order to understand what older people, think about the online world, this section explains the current literature, including peer-reviewed journals and reports around the perceptions and views of older people about the online world. Although, the topics 'online' and 'older people' are of great research interest and have many studies investigated in these topics, there are only a few studies related to the perceptions of older people about their online world usage. The progression of technology and its implications in society in the past few years attracted more people to the online world and resulted in a change in the views of older

people. Hence, perceptions of older people about their technology use over time in the existing literature are discussed in the section below in a chronological order.

Perceptions of older people vary over time about their online world usage. A combined survey research conducted by Morris et al. (2007) among the UK older adults about their views of the internet and computer use clearly identified the "grey digital divide" that exists in the UK, with several people missing out on the benefits of computers and the internet. This claim was supported by the then statistics of the ONS, in which only 9% of older adults used the internet in the UK (ONS 2016). This study combined two independent surveys of computer and internet use, access and training among the 120 participants aged over 55 from Derbyshire and 353 participants over 50 in Scotland. Furthermore, in the study, the potential barriers for usage of the internet and enormous benefits of using the internet by older people were reported. Their study indicated that older people are missing out on the enormous potential the internet has to benefit in their daily lives. However, the recent statistics show that a greater number of older people are using the internet, which makes up to 64% in 2016. This may indicate that the digital divide is shrinking and therefore, an updated perception of older people is required in the face of the evolution of technology and number of users.

Another study conducted by Mitzner et al. (2010) among 113 American older adults reported that they perceive the benefits of technology use to outweigh the cost of such use. In their study, the positive attitudes (likes) of the participants outweighed the negative attitudes (dislikes). Moreover, in their study, older adults participated in the focus group, discussing their use and attitudes about technology in the context of their home, work and healthcare. Participants of their study were using a variety of technological items including a computer, microwave, cellular phone, television, telephone, DVD, VCR, fax, scanner, digital camera, blood glucose monitor, blood pressure monitor, and the internet. However, the term 'technology' in their study was not used for just computers and the internet but included wider technological innovation. Therefore, their article will not provide the perception of older people about the internet and computers separately.

In an opinion poll called 'The digital by default' (unpublished), conducted by TNS Global for Age UK (2012) among the UK older people aged 55+, equally divided views were reported on whether everyone should learn to use the internet. Around 42% thought that they should

learn to use the internet, whereas 43% disagreed, and 14% neither agreed nor disagreed. However, there was a strong feeling that older people who did not want to go online for whatever reason should be given alternate means to use the essential services. Around 94% of the participants of the survey agreed with this, with 83% strongly agreeing. The premise that "older people should move with the times and use the internet as a part of their lives" fails to show a change of attitude, with 50% disagreeing and 32% agreeing. This opinion poll's details were specified in the Age UK Digital Inclusion Evidence Report (2013).

However, society's reliance on digital technology has increased over time as a result of the digital revolution, resulting in migration of services to the online world. This may have influenced the increase in the number of older adult users in the UK and in other parts of the world to use the online world. At the same time, the rapid progression of technology in past years resulted in excluding some people from the online world, termed as digital exclusion (Wagner, Hassanein, & Head, 2010). The grey digital divide was highlighted in the study by Morris et al. (2007), and several studies support this. For example, a study conducted among the older people living in Switzerland by Friemel (2016) identified that the digital divide has shifted to the older people from younger generations. This study reported that the seniors over 70+ are partially excluded from the network. Many other studies reported the existence of the digital divide (Mubarak 2015; Noh and Yoo 2008; Mubarak & Nycyk 2017).

Many other studies also investigated the perception of older people about the technology experience. For example, a study conducted by Gjevjon et al. (2014) investigates the technological experience of older participants from Eastern Norway. An internet-connected tablet (iPad) was introduced to the participants and then their experiences were reported using the focus groups and interviews. There was a mixed result in which participants in general showed a degree of interest and curiosity regarding new technology. However, few raised their concerns and fear about the digitization of society, whereas others saw it as an opportunity. Some participants found the technology and tablets as an opportunity for them to communicate with others by video communication or social media or using technology for entertainment. The others feared that the technology-based communication would result in loss of face-to-face communication or cause a safety risk. However, this study focused only on tablet (iPad) user experience and the users were first-time users of tablets, which was just introduced to them. Therefore, their study provided the perception of novice users at the

early stage of their iPad use, when it was introduced to them during focus groups and workshops.

Moreover, in their study, they identified three typologies of technology older users. They are the excluded, the entertained and the networker. The excluded users were the reluctant non-users of technology. The entertained users were enthusiastic, frequent technology users, and their focus of usage is for entertainment. The networker user is also an enthusiastic frequent user; however, the focus of technology use is for communication with others. However, in their study, the typology focused on the purpose of the usage of technology to classify the users.

Another study conducted by Zheng et al. (2015) among 339 American older users investigated the perception of their internet use. Their study identified four factors as critical for older people to use the internet. The factor analysis of the data yielded social connections, self-efficacy, the need to seek financial information, and the need to seek health information as the four crucial factors perceived by the participants pertinent to their internet use. Their study demonstrated that older people perceive social connection as a factor to entail their psychological well-being. However, this study collected data using survey questionnaires and is limited in terms of region (western US only). Moreover, the questionnaire was developed based on the four constructs previously identified and the participants completed survey questionnaires online and the study did not involve explanatory questions for participants to explain their perceptions.

Another study was carried out as a part of the project 'Gerontechnology and You' by Ya-Huei Wu et al. (2015) in France, which identified project participation, digital divide, ICT adoption, and opinions on assistive ICTs as the main themes. The participants in general were captivated by the potential of technologies. However, most of them reported that they lag the social trend that progresses with technology evolution. The differences between generations, lifestyles, thinking and moral values have contributed to their digital divide. Most of the participants stated that they use technology to keep in touch with friends and family, to receive information, and to be connected to society. The participants in their study frequently reported social pressures that push them to use the technologies in order to fit within society. However, some participants thought it as a social injustice that they have no choice but to use

new technologies to access information and services. Their study conducted several focus groups throughout the project period. However, their study focused on ICT devices including assistive devices like cognitive prosthesis, a videoconferencing application prototype, assistive and companion robots, and tablet computers and video games. However, their study was specific to a project and therefore may lack representativeness in the sample as some might be using just assistive technologies, whereas some just tablets.

There are other studies that investigated the perception of older people about their online world usage after IT training projects. For example, a study conducted by Gonzalez et al. (2015) among Spanish older adults investigated the attitudes of older adults about computer technology in the context of a 20-hour basic course in computers. A questionnaire was used to collect data at pre and post training time points. The findings revealed that direct contact with computers generates more positive attitudes towards computer use and a positive relationship with attitudes, user behavior, training expectations and self-confidence. However, the study collected data using a questionnaire that was designed to measure certain aspects of seniors' attitudes toward computers and did not provide provisions for the participants to express their own views.

Another study conducted by Gardner et al. (2012) explored the ICT training and its relationship with various measures such as increased and sustained computer use, improved ability and confidence with technology use, and a substantial and positive effect on social connectedness, access to information, and social and civic participation. Their mixed method study was carried out during a training course and collected data from 66 older adults living in the city of New York. Participants agreed that enhanced ICT abilities provided them more opportunities to establish new community ties and the ICT skills enabled their access to a wealth of information about their areas of interest. It enabled them to find new opportunities within their city, to get involved, and meet others with similar interests. However, in their study, the positive effect during an intervention such as an ICT training programme was explored. Moreover, their study collected data from participants aged 50+ living in the city of New York, including full-time and part-time workers, along with retirees.

Next, a recent qualitative study conducted by Hill et al. (2015) among UK older adults to identify their experiences and perceptions of digital technology highlighted both

disempowerment and empowerment of technology in the participant's lives. The participants' talk was focused on the digital divide and how digital technology not only facilitates and empowers their well-being, but also increases isolation and loss of access to participation in democracy/civic duties within their communities. Older adults who participated in their research clearly recognize the value of technology as well as the fact that it can disempower older people and isolate them from a modern technology-driven society. However, their study was carried out with participants that were selected from a digitally-aware group of older adults. Moreover, in their study, digital technology was most frequently defined as computers and telephones, along with Skype, Facebook and Kindle, and very few defining as iPad, television, Twitter, printer and emails. This shows digital technologies were given a broad meaning in their study by the participants.

Another recent study conducted by Vaportzis et al. (2017) investigated older adult's perceptions of technology and barriers to interacting with tablet computers. The data was collected from 18 adults living in the Edinburgh area, aged between 65-76 years. The participants were novice tablet users and 83.3% of the participants were women. The participants showed skepticism and mixed feelings about technology and tablet use. Some participants agreed that using a tablet could improve various skills and abilities, whereas some others were skeptical about the tablet's ability to improve the older people's skills and abilities. Further themes emerged from their study, including the barriers to using the technologies and tablets, including a lack of instruction and guidance, lack of knowledge and confidence, health-related barriers and cost barriers. Another theme emerging from the data includes the disadvantages and concerns about using technologies and tablets, such as the complexity of technology and tablets, a feeling of inadequacy, comparison with the younger generation, lack of social interaction and communication, and negative features of the tablet. Further, the participants admitted the advantages and potential of technologies and tablets, including positive features of tablets, ease of accessing information and services, and demonstrated a willingness to adopt technology. However, their study focused only on a specific device, the 'tablet', and its use for a novice group of participants. Moreover, nearly one third of the participants reported that they were undecided or unlikely to use a tablet in the future. However, these results should be interpreted with caution, given the possibility of bias of participants in the setting of focus group.

Studies discussed above explored the perception of older people about using different technologies. As discussed previously, this study focuses on social participation in the online world, and therefore the literature that was retrieved from the search that particularly have social components are separated and discussed below.

2.3.9 Perceptions of older people about their online world social participation

Social participation is important for aging well, and the online world has transformed how older people can participate in different social activities. There are opportunities provided by the online world to socially participate in different activities. However, only a few studies particularly focused on social participation (including social contact or contributing resources to society or receiving resources from society, and can be formal or informal) of older people, as most studies explained the general use of the online world.

A study conducted by Ihm & Hseih (2015) on the implications of ICT use for social well-being of older adults investigated the relationship of age, gender and income with the older adults' ICT use. Moreover, they investigated the instrumental uses of ICT and its relation to offline social engagement. Their study tested the hypothesis by collecting data from 1,780 people aged between 60 and 86, living in the Chicago region. Their study identified that there is a positive relation between instrumental use of ICT and offline social engagement. However, their study did not show any relation with social use (social contacts) of ICT and offline social engagement. Moreover, it was a quantitative study and therefore failed to explore the perceptions of older people and explain how the ICT is helping offline engagement. Moreover, the context of this study is different from that of older people in the UK.

Another study by Chopik (2016) investigated the social technology use (i.e. using e-mail, social networking sites, online video/phone calls, online chatting/instant messaging, using a smartphone) of older adults and its relationship and physical and psychological health of older people. However, participants of their study had positive attitudes towards technology. Moreover, higher social technology use was associated with better self-rated health, fewer chronic illnesses, higher subjective well-being, and fewer depressive symptoms. However, their study was conducted by collecting data from 591 older people from the 2012 wave of the Health and Retirement Study of US retirees. Also, the study mainly explored the social contact using technology rather than overall social participation in the online world.

Another study conducted by Kim et al. (2017) about technology access and use and their associations with social engagement among older adults identified that there is a positive association with ICT access on women's formal and informal social participation, but only men's informal social participation. ICT use for health matters was positively associated with formal social participation for women and with informal social participation of men. However, ICT use for personal tasks was negatively associated with formal social participation in men and women. Their study was carried out by drawing data from National Health & Aging trends study (NHATS) from 6,476 older adults aged 65+. However, their study was a quantitative study and therefore failed to explore the perceptions of older people and explain how ICT is helping their social engagement. Authors stated that the limitation of their study was the limited questions about ICT use in the survey and was therefore unable to capture the extent of ICT use. Moreover, context of this study is different from that of older people in the UK.

Finally, another study conducted by Larsson et al. (2017) among Swedish seniors by introducing social internet-based activity as an occupational therapy intervention identified that social internet-based intervention can support older people to overcome the obstacles that prevent them from participating in social internet-based activities. Their study also identified that individually targeted interventions can enrich their social activities and social contacts, both on internet and outside. Their study also identified that social contacts using the internet was very valuable for the participants and was supplementary to the offline social activities, but described that offline social contacts were something "different". However, their study was targeted on specific interventions for participants rather than overall online world usage. Therefore, it will not provide a complete extent of the participant's online world usage. These are the studies that explored the perceptions of older people about their online social participation. This shows that a limited number of studies explored the perception of older people about their online world social participation and its effect on physical world social participation.

2.3.10 Identifying the gap

Technological innovations resulted in the emergence of a new platforms to socially participate in different activities and may be beneficial for older people to stay active in their later life. This review chapter explored at the beginning the evidence related to older people's social participation in the physical world. Current social participation rates in the UK were explored,

along with its benefits and important factors affecting social participation in the physical world. The second section of the chapter explored social participation in the online world. Data from the ONS was used to demonstrate the usage of the online world by older people. Several opportunities provided by the online world, benefits and the main barriers of using the different online world opportunities were discussed.

Further in the section, the perceptions of older people about their online world usage was discussed and some studies specifically explored social participation in the online world. Many studies considered investigating the perception of older people about their online world usage. However, early studies that explored the digital divide and the perceptions of older people needs an update as the technology has changed, as well as more people are using internet now. Some studies conducted surveys using quantitative method and failed to capture the perception of older people in their own words. Some other studies explored the perceptions of older people using specific devices (e.g. tablets), or a wide range of technology devices including appliances or assistive technology or after a specific intervention (e.g. computer training). Therefore, it is significant to understand the perception of older people about their online world usage.

Moreover, as this study focus on social participation of older people using the online world and its effect on their physical world social participation, studies that discussed social participation were also explored. The review showed that the studies were either conducted in a different context (e.g. in a different country), or used quantitative surveys or investigated into special interventions rather than the overall online world usage. Therefore, the review suggests that there is a gap in the literature that explores the perceptions of older people about their social participation in the online world relative to their physical world social participation. Hence, this study aims to explore the perception of older people about their social participation in the online world and its effect on their physical world social participation. Furthermore, this study aims to explore the perceptions of older people about their social connectedness and subjective well-being experienced during their online world usage. Therefore, in the next sections, literature around social connectedness and subjective well-being in the online world are discussed.

2.4 Social Connectedness

2.4.1 Introduction

Social participation has different dimensions and social connectedness is an important dimension of social participation. Social connectedness is crucial for well-being in older people (Koopman-Boyden & Waldegrave 2007; Antonucci, 1990; Berkman et al. 2000). In this section of the chapter, the review of the literature was carried out to provide a clear understanding of the term social connectedness, identify its link between social participation, and explore the existing literature identifying the role of the online world in providing social connectedness in older people.

To understand the term social connectedness, the related term belongingness needs to be explained initially. Kohut (1984) developed the concept of belongingness. This concept was later expanded by Lee & Robins (1995), which demonstrated the three aspects of belongingness. They are companionship, affiliation, and connectedness. In their explanation, a sense of connectedness begins to emerge at adolescence and extends throughout the whole life. It is the capability of a maturing person to feel comfortable and confident within a larger social context than family and friends (Lee & Robins 1995).

The belongingness theory was developed by Baumeister & Leary and it states that individuals have an evolved and robust need for closeness and social belonging (Baumeister & Leary 1995). However, drawing from the belongingness theory and definition of connectedness by Lee & Robins, Lee et al. (2001) explained the construct of social connectedness as the feelings associated with the engagement in social networks of the individual. Significantly, the theory of belongingness implies that not just the presence of others satisfies the belongingness needs of the individual, but the quality and meaningful contacts and connections are the main factors that matter (Baumeister & Leary 1995).

A few other studies have provided notable definitions for social connectedness. For example, according to Townsend & McWhirter (2005) in their literature review about connectedness, they suggested that the most discreet definition of connectedness is presented by Hagerty et al. (1993), where “Connectedness occurs when a person is actively involved with another person, object or group or environment and that involvement provides a sense of comfort, well-being and anxiety reduction”. Furthermore, another definition by Van Bel et al. (2009;

pg:1) states social connectedness as “a short-term experience of belonging and relatedness, based on quantitative and qualitative social appraisals, and relationship salience”.

The above definitions of social connectedness imply that it is a feeling of a person’s experience during their social contact or involvement in any kind of activities with either a person or object or group. Therefore, this study explores the social connectedness experienced by older people during their interaction with the online world while engaging in different activities.

Social connectedness has many positive psychological outcomes. For example, research conducted by Cockshaw et al. (2014) on employees in a workplace determined that people with higher levels of social connectedness experience less depression. In another study conducted by Satici et al. (2015) among university students in Turkey, it was identified that a high level of social connectedness reduces loneliness. Moreover, the research conducted by Jose et al. (2012) in adolescents identified a positive relationship between social connectedness and subjective well-being. All these studies identified the social connectedness experienced in the physical world.

In the review of literature of connectedness conducted by Townsend & McWhirter (2005), it was identified that connectedness provides insights into the fact that it promotes human psychological development and well-being. Furthermore, their review illustrated the multidimensional construct of the connectedness. However, in this study, social connectedness is the perceived feelings of older people by their meaningful social participation with family, friends and a wider network in the online world.

Social connectedness is important for people and most adults are socially connected in one way or another. Certainly, people can lose their social connections at any stage of their life. However, as people age, there is a notable change in the social networks leading to the reduction in the social connectedness in older people. This can be due to many factors such as lifestyle changes (Philip et al. 2013), mobility constraints (Machielse, 2015), co-morbidities (Chapman & Perry 2008), declining physical health (Chesley & Johnson 2014) and due to the cultural changes in the society (Stanley et al. 2010). Moreover, loss of close ties along with the decreased frequency of contact can result in the loss of connections (Cornwell et al. 2008). The next section explains social connectedness as a dimension of social participation.

2.4.2 Social connectedness and social participation

Social connectedness is a cause and at the same time an effect of social participation (Portes 1998). The relationship of social participation and social connectedness are explained as virtuous cycles (Toepoel 2013) in which social ties stimulate social participation (Van Ingen and Van Eijck 2009), and participating in social activities, on the other hand, results in social ties (Longino and Cart 1982).

Social participation includes contacts with the family, friends, and the community through different social networks. It provides a connectedness in individuals and is essential for the people (Cornwell et al. 2008; Fiori et al 2006). Moreover, Social participation that results in the integration of social ties and networks provides connectedness to older people. Having many direct bonds with the community gives older people alternative ways to access valuable resources, which in turn increases a person's chances of receiving needed support and services (Cornwell et al. 2008). Therefore, social participation that provides social connectedness will be valuable for the older people.

Social connectedness can be measured objectively by the number of social ties of an individual. However, Social connectedness is a subjective notion in which the quality of the social ties matters more than the quantity of the social ties. Therefore, social connectedness is characterised by the quantity and quality of the social connections older people establish in their social circle (Gowsami et al. 2010). Social connectedness can be achieved by the social participation that involves contacts, activities that contribute resources to society, as well as activities that receive resources from society.

Social connectedness has been characterised by the network size, frequency of interaction, network density, member closeness and presence of family (Ashida & Heaney 2008; Cornwell et al. 2008). These characteristics are focused on the social connectedness achieved during a specific communication method in the previous studies.

2.4.3 Social connectedness in the online world

As discussed before, the online world provides vast opportunities for older people to take part in different activities. The emergence of technology along with the introduction of Web 2.0 increased the growth of online users exponentially in the last decade. Interactive Web 2.0

technology provided older people with opportunities to actively participate in different activities such as social contacts with family, friends and acquaintances, activities that involve the contribution of resources, as well as receiving resources (Stroud 2011). The participation in different activities in the online world will be valuable for older people. This section reviews the existing literature, which explains the social connectedness that older people experience during their social participation in the online world.

A study conducted by Culley et al. (2013) examined the relationship between technology and connectedness in community-dwelling older adults in South Carolina. However, the findings of their study demonstrated that as age increases, activities with technology decreases. Further to their findings, the study also identified a weak correlation between the interest, skills, and intent to use the technology with how to face aging. Conversely, their study did not identify the connectedness that the older people achieve during the use of technology. It was explained as a limitation of their study by the authors.

Another study upon which a survey research was conducted, by Hage et al. (2016), was to identify the impact of the online communication on older adults' social connectivity in the Netherlands. Their findings yielded a mixed result. Their study used email and Facebook as a medium of online communication and investigated the connectivity with friends and connectivity with their village. They identified that email use has a negative impact on their connectivity with their village, whereas there was no impact on connectivity with friends. Furthermore, their study identified that using Facebook has a negative impact on connectivity with friends and no impact on connectivity with their village. However, their study just looked into the online communication of older people rather than their overall social participation in the online world, and considered only Facebook and email application.

Moreover, Morris et al. (2014) conducted a systematic review to identify the role of smart technologies to enhance social connectedness in older people who live in their own homes in Australia. They identified that smart technologies like internet programs, training and applications may help older people to manage and understand their health conditions better, leading to subsequent improvements in aspects of social connectedness. Their study analysed 18 papers, which researched single applications of smart technologies and their effect on social connectedness.

Another research study conducted by Saunders (2011) in Ireland identified the use of different technologies such as monitoring technology, fall prevention technology, and security technology, and identified that these technologies have helped to provide more independence to older people, thereby providing them more opportunities for connectedness. However, their study identified the need for the deployment of communication technologies for socialising, communication and information provision to improve social connectedness in the older population. Their study mainly focused on assistive technologies.

Another research conducted by Goswami et al. (2010) identified means of increasing social connectedness and social support among the elderly through social participation in online social networking sites (SNS). This study identified the potential of social networking sites to enhance social connectedness by overcoming the impediments faced by the elderly users. Moreover, their study further suggested appropriate features and user design recommendations for social networking sites to accommodate the elderly and meet their requirements. However, their study mainly looked into the social networking sites rather than overall online world social participation.

Similarly, Greive et al. (2013) conducted a research to identify Facebook connectedness in the older population. Their study identified that social connectedness is associated with improved psychological health and well-being. Furthermore, another study by Greive & Kemp (2015) identified the characteristics that facilitate the experience of social connectedness when using Facebook. Findings of their study identified that age is not related to experiencing social connectedness while using Facebook. Attitudes and personal characteristics of individuals are the main features that facilitate the experience of social connectedness when using Facebook. However, like other studies, their study was mainly into Facebook use rather than overall online world social participation.

Later, a quantitative research conducted by Sinclair & Greive (2016) identified that social connectedness could be achieved in the older population using Facebook. Their study further investigated the extent to which social connectedness was achieved by older people. The result of this finding remained close to that of a younger age. The results provide an insight

into the personal characteristics and attitudes of a person towards Facebook, and that attitude determines the extent to which social connectedness can be achieved by that person.

Another study conducted by Cornejo et al. (2013) identified that social networking sites could enrich the social networks of older people. The study used a specifically designed social networking site called Tlatoque. Tlatoque is a social networking site designed like Facebook especially for older people, with simple features. The result of this study identified that Tlatoque improved the family connectedness of older people. Moreover, another study conducted by Milliken et al. (2012) identified video communication as a method of establishing connectedness with family and friends. However, the participants complained about the technical issues they face during the communication, such as poor quality of sound or video.

Therefore, it is clear from the above evidence that social connectedness can be achieved using the internet, social networking sites, and different interventions. However, previous studies tend to identify the social connectedness older people achieved during their online communication or focusing on a specific application or intervention. There is a gap in the literature that explores the overall social connectedness achieved by older people during their participation in different activities in the online world. Unlike where the other studies tend to identify the social connectedness they achieve during the online communication or using any special application such as Facebook, this study focuses on the social activities in the online world that involves the social contact, contributing resources to society and receiving resources.

As mentioned earlier this study, it also aims to explore the perceptions of older people about their subjective well-being experienced during their online world usage. Therefore, in the next sections, literature around subjective well-being and the online world are discussed.

2.5 Subjective Well-being

2.5.1 Introduction

This section reviews the existing literature on the definition of subjective well-being and explores the current literature around the online world social participation of older people and the subjective well-being they experience during their participation in the online world.

Before exploring the definition of subjective well-being, it is useful to understand the concept of well-being. Well-being is defined as “when an individual has the psychological, social and physical resources they need to meet a particular psychological, social and physical challenge to maintain an equilibrium” (Kloep et al. 2009, p. 337). However, the concept of well-being is universal, and the subjective well-being is a subjective, individual-level experience. According to Diener (1984), subjective well-being is defined “as the degree to which people feel good about and think well of their lives”. The subjective dimension of well-being focuses on personal views of life experience that matches the social, economic, and health indicators. It could be identified by measuring the degree to which a perceived requirement is being met and the significance of that perceived need for one's overall quality of life (Haas 1999; Easterlin 2011).

Later Diener et al. (2002; p: 63) defined subjective well-being as “a person’s cognitive and affective evaluations of his or her life”. The cognitive component points to what one thinks about their life satisfaction or life as a whole. The affective component points to one’s emotions, moods, and feelings. Affect can be positive or negative. Therefore, according to Diener et al. (2002), a person is said to possess high subjective well-being if they have a high level of life satisfaction, greater positive affects, and little or less negative effect.

According to the conceptual framework developed by Tinkler and Hicks (2011) for measuring the subjective well-being for the Office for National Statistics, this includes mainly three overall monitoring factors. They are life satisfaction, happiness/anxiety, and Perceived worthwhileness.

2.5.2 Subjective well-being in the online world

Studies that explored the concept of subjective well-being in the online world are discussed in this section. An action research conducted by Hasan & Linger (2016) identified that the

social use of the digital technologies has the capability of enhancing the well-being of the older population. This study was conducted among the older people living in care settings in Australia. Although their study looked into the social use of technology and well-being, it did not address the subjective well-being of the participants. Another research conducted by Ishii (2015) in Japan identified that the use of LINE (an instant messaging application) has a significant correlation with the subjective well-being of the participants. This study focused on the impact of online communication on the subjective well-being of a generalised population of all ages and not particularly on the aging population.

Moreover, a survey research conducted by Ho et al. (2014) among older Americans identified that higher levels of internet use significantly predicts well-being, along with reduced loneliness and better life satisfaction. However, their study focused on the psychological well-being of the participants. Furthermore, the research, conducted by Ihm & Hsech (2015), identified that the instrumental use of ICT has an impact on the well-being of the older adults. However, their study failed to address the social use of ICT and its impact on well-being. Some other studies investigated the well-being of older people by their internet use (Heo et al. 2015). However, they investigated the psychological well-being of older people by their internet use. Studies by Shapira et al. (2007) and Slegers et al. (2008) looked into the effect of computer training on the well-being of the older people.

Another study by Chopik (2016) investigated the social technology use (i.e. using e-mail, social networking sites, online video/phone calls, online chatting/instant messaging, using a smartphone) of older adults and its relationship and physical and psychological health of older people. Their study also explored the subjective well-being experienced during the usage of the technology. Their study identified that higher social technology use was associated with higher subjective well-being, along with other factors. However, their study was conducted by collecting data from 591 older people from the 2012 wave of the Health and Retirement Study of US retirees. Subjective well-being was assessed with the Satisfaction with Life Scale questionnaires and therefore failed to understand the perceptions of older people.

Several other studies focused on the effects of internet use, predominantly social networking sites on subjective well-being. These studies include work on the effects of subjective well-being on participation in online communities through social networking sites (Ellison et al.

2007; Lee & Kwon 2011). However, their studies focused on the college students rather than older people.

There are few studies that have negative results. For example, the research conducted by Dickenson & Gregor (2006) identified that computer use has no demonstrated impact on the well-being of older people. Later, Nie et al. (2017) identified that internet use hardly has an association with the subjective well-being of the participants. However, the participants in their study were a sample of 16-60-year-old people.

Contrastingly, there are evidences that show the enhancement of subjective well-being by older people during their physical world social participation. The research, carried out by Zhang & Zhang (2014) among Chinese retirees, identified that social participation in the physical world has many positive effects on the subjective well-being of older people. Moreover, physical world social participation give instant emotional benefits (Berkman et al. 2000), positive roles in social activities, such as group activities and volunteering, frames one's identity and self-worth (Borgonovi 2008), and greater social participation makes a person more approachable to social influence, which can robustly control one's subjective well-being (Fowler and Christakis 2008).

Another research conducted by Rafnsson (2015) identified that different aspects of people's social networks might help them to sustain levels of subjective well-being in the physical world of older people. This study also outlines that the close relationships and frequent contacts are crucial to improve the subjective wellbeing. As the online world provides opportunities to maintain social contacts, contribute resources to society and receive resources from society, and there is a lack of evidence that explores the perceptions of older people about their subjective well-being during their online world usage, therefore, this study explored the subjective well-being of older people during their online world social participation.

2.6 Summary of literature review

Social participation is an important element for enhancing social well-being in older people. This chapter explored the literature relating to social participation and older people. Due to the advancement of technology in the past few decades, this has resulted in an opportunity to participate in the online world along with the physical world. Therefore, the first two

sections of this chapter explored the social participation of older people in the physical world and in the online world. Furthermore, social connectedness and subjective well-being are two important dimensions of social participation. Therefore, the next two sections of this chapter explored the existing literature about the social connectedness and subjective well-being experienced by older people during their social participation in the online world.

The first section of this chapter discussed social participation in the physical world. This section begins with explaining the importance of social participation in old age and its gradual decrease, which was explained using different theories. The most prominent theories relating to social participation in old age are the disengagement theory, activity theory, continuity theory, and socio emotional selectivity theory. These theories demonstrated the significance of social participation in old age and the likely gradual decrease in social participation. In order to obtain an insight into the social participation of older people in the UK, the ONS figures were discussed and it showed that only 48% of older people were active in social activities in the community, which is less than other age groups.

Further in the next section, the benefits of social participation in old age were discussed. Studies reported that social participation has a positive effect on the overall health of older people, including mental health. Studies also suggest social participation enhances better sleep, less loneliness and isolation, reduces depression, improves mobility, reduces the risk of mortality, improves cognitive function, and reduces the risk of dementia. Moreover, effects of social participation on well-being, life satisfaction and independence were also discussed. Very few studies suggested the downside of social participation. However, positive effects of social participation outweigh the negative effects. Furthermore, the main factors contributing for social participation in older people such as environmental factors, disability, health factors, personal characteristics, psychology factors and socio-economic factors were discussed. Studies suggested that adjusting these factors for older people depending on their circumstances can improve social participation at later age. Therefore, the first section of the review concluded that social participation is important for older people to live an active life and there are several factors that affect their social participation at a later age.

The next section of this chapter discussed the social participation of older people in the online world. This section started with explaining the emergence of the online world due to the rapid

progression of technology in the past few decades. In this study, the online world is a subjective space and the main components of the online world are the internet, devices, applications and human users. Advancement of the internet from a few slow-wired connections to fast million connections, advancement of devices from large devices occupying a large room to handheld, small devices fitting into our pockets, advancement of different applications from complicated coding to simple emojis, and transition of human users from passive to active users have contributed to the popularity of the online world. This has resulted in an increase in the number of people using the online world and subsequently, an increase in the number of older users. The next subsection discussed the figures of online world users drawn from the Office for National Statistics' facts and figures. The figures indicated that the older users of online world have increased in recent years, from 9% in 2006 to 64% in 2016.

The next subsection explained the opportunities created by the online world for older people. The main opportunities such as communication, support groups, information seeking, internet banking, online shopping, entertainment and social networking were discussed. Benefits of using these opportunities include improving quality of life of older people, improving health and well-being, improving connectedness with friends, family and community, achieving overall life satisfaction, improving cognition and reducing the risk of dementia, and mitigating loneliness and social isolation.

Despite the opportunities and benefits of the online world, several barriers hinder the participation of older people in the online world. These barriers include lack of access, complexity of terminology, lack of skills, frustration, mistrust, functional limitations, time, anxiety, previous bad experience, continuous change in technology, lack of training and training materials, lack of knowledge, lack of help and support, interest, perceived need and benefits were identified by many previous studies and was discussed.

Opportunities and benefits of the online world are capable for addressing many challenges of later age. Therefore, usage of the online world is an important aspect in the lives of older people in this society. Recent figures showed a change in the number of older people using the online world, but it demonstrates that there is a lag of older people embracing technology from other age groups. Moreover, the changing nature of technology means a change in the

skills of using the online world to maintain their inclusion. Therefore, a review was carried out on the existing literature in order to gain an understanding about the perceptions of older people about their online world. Although there are many literatures around the topics of 'older people' and 'online', only a few studies explored the perceptions of older people. As discussed previously, the change of technology over time and subsequently their views were different over the years about the online world. Therefore, a chronological order was maintained in explaining the perceptions of older people.

An earlier study, conducted by Morris et al. in 2007 among UK older adults, demonstrated the existence of a digital divide in the UK in the adoption of technology by older people. Later, an unpublished survey conducted by TNS Global for Age UK in 2012 reported an equally divided view on whether everyone should use the internet. The survey highlighted that people should be given a choice and alternate ways to access services without the internet. Both these studies collected data using a survey method, which failed to capture the perceptions of older people in their own words. Other studies collected data using a qualitative method but was considered not just internet but for a wider range of technology in the homes, including all digital technology devices and appliances. Moreover, some other studies that explored the perception of older people looked into certain interventions, some services or certain devices or in a different setting.

Furthermore, very few studies particularly looked into the perceptions of older people about the 'social' aspect of using the online world and its effect on physical world social participation. However, the studies identified collected the data using a quantitative method, which failed to capture the perceptions of older people in their own words or looked into a specific intervention in a different context. Therefore, the review identifies a gap in the literature, which explores the perception of older people about their online world social participation and its effect on their physical world social participation.

The next section of this chapter discussed one of the important dimensions of social participation, which is social connectedness. The section defined the term social connectedness and discussed the literature around social connectedness and the online world. Evidence from the literature suggested that social connectedness can be achieved using the internet, social networking sites, and different interventions. However, there is a

gap in the literature that explores the overall social connectedness achieved by older people during their participation in different activities in the online world.

The final section of this chapter discussed another important dimension of social participation, which is subjective well-being. The section defined the term subjective well-being and discussed the literature around subjective well-being and the online world. However, there is a gap in the literature that explores specifically the subjective well-being of older people during their online world social participation. Based on the gaps identified in the literature review, the research aims were devised and is illustrated in the next section.

2.7 Research Aims

The overarching aim of this study is:

- To explore the perceptions of older people about their social participation in the online world relative to their physical world social participation

The overarching aim is divided into sub-aims to focus on the identified gaps in the literature effectively. Therefore, the sub-aims are:

- To understand the sense of social connectedness they experience using the online world social participation
- To understand the subjective well-being they experience using the online world social participation

The next chapter details the research questions devised to carry out this study and the methodological approach used to answer the research questions.

3 Research Design

3.1 Introduction

This chapter outlines the methodology and methods designed to carry out this research study. The overarching aim of this study was to explore the perceptions of older people about their social participation in the online world and its effect on their physical world social participation. Furthermore, the study explored the social connectedness and subjective well-being experienced during their social participation in the online world. In order to achieve the aims by exploring the perceptions of older people, which is subjective to individuals, the following research questions were framed. There are many research literature and books discussing methodology in conducting a research study. This is helpful, and at the same time, the lack of clarity in using different terms such as methodology, methods, ontology, epistemology, philosophical worldview, the research design was prominent during the search of the literature. The researcher followed mainly Creswell's (2014) terminology related to the important terms of research methodology.

3.2 Research Questions

The following research questions were framed to guide this study.

1. How do older people perceive their social participation in the online world relative to their social participation in the physical world?

2. How do older people perceive the social connectedness they experience with the social participation in the online world?

3. How do older people perceive the subjective well-being they experience with the social participation in the online world?

3.3 Objectives

In order to answer the above research questions, the main objective of this study was to explore the perceptions of older people in detail:

- To ascertain the views about the activities that they perform using the online world

- To ascertain the views about their experiences in using the different devices and participating in different social activities in the online world
- To ascertain the views about the role of the online world in their social participation in the physical world
- To ascertain the views about the connectedness they achieve using the online world
- To ascertain the views about the subjective well-being they achieve using the online world
- Collect data using semi-structured interview and analyse it using thematic analysis
- Use the data to explain the views of older people about their social participation in the online world

The rest of this chapter draws on the detailed design of this research study.

3.4 Research Approach

In order to achieve the objectives of this study, a research approach was adopted to guide this research forward. According to Creswell (2014), research approaches are plans and procedures that are used in the study to carry out data collection, analysis, and interpretation of data. Three different research approaches can be used to conduct a research study. They are the quantitative approach, qualitative approach, and mixed methods approach. As this study aimed to explore and understand the perceptions of older people about their social participation in the online world, qualitative approach is chosen to guide this study.

However, the three approaches were considered at the beginning of this study design and the most appropriate approach was chosen to conduct this study. Three approaches are discussed in this section to provide a justification for the chosen approach. Quantitative research is an approach often used for testing the set theories by interpreting the relationship between variables. The quantity of data matters in this approach. The main strengths of this approach are testing theories deductively, able to prevent biasing and being able to generalise and replicate the findings to wider population (Creswell 2014; Silverman 2009; Bryman 2012). However, quantitative data cannot provide human perceptions, beliefs or experiences,

leading to the lack of in-depth data (Creswell 2014; Robson 2011; Silverman 2010; Bryman 2012; Choy 2014). In this study, the perceptions of older people about their online world social participation were explored and required rich, in-depth data to understand the views of the people. Therefore, given the nature of this research in this study, it was decided that a quantitative approach would not be appropriate.

On the other hand, a qualitative research approach is an approach for exploring and understanding the meanings people or individuals attribute to a social problem. To gain a deeper understanding of a research problem, words are used to explore rather than numbers or variables. Moreover, the qualitative researcher understands and explains the complexity of the situation. Qualitative research approach uses data collected from the participants, typically from the participant's setting or an agreed location (Creswell 2014; Robson 2011; Silverman 2010; Bryman 2012; Choy 2014). In this approach, collected data is analysed into general themes, and the researcher makes interpretations of the meanings of the data. The participants had more control over the data and were able to express their views in their own words (Creswell 2014; Robson 2011; Silverman 2010; Bryman 2012; Choy 2014). Therefore, to gain a deep understanding about the social participation of older people in the online world, and to explain their experiences in efficient words, this approach was chosen to be appropriate to guide this study.

However, there is a third approach called mixed methods research. This is an approach to an inquiry by collecting quantitative and qualitative data and integrating both forms of data to obtain the results. This approach provides the strengths that offset the weaknesses of both quantitative and qualitative research. However, this research design involves lots of resources and time, and involves a higher level of complexity (Creswell 2014; Robson 2011; Silverman 2010; Bryman 2012). Nevertheless, this research did not aim to collect the quantitative data and integrate with the qualitative data, rather to explore the perceptions of older people about their social participation in the online world; this approach was not employed in this study.

3.5 Qualitative Research Approach

This approach aims to explore and understand the meanings people or individuals attribute to a social aspect. Perspective of everyone will differ and the meanings they attribute to

different situations. Words can effectively explain the subjective meaning an individual gives to a social aspect. Moreover, the perception in qualitative research is a mode of capturing the reality and experience to explain any actions or behavior or language or form. Individual perception is complex and will be different for each people depending on their opinion, circumstance, experience, personal characteristics or personal meaning (Given 2008; Bryman 2012; Creswell 2014).

In this study, older people's meaning about their online world usage, particularly in social activities, are explored, and therefore a qualitative research approach is employed. This method enables us to understand their experiences in using the online world and its role in their day to day life in the current context. Moreover, this study focuses on gathering the insights of what seems important to older people and the social realities of their lives from their perspectives in using the online world (Creswell 2014; Bryman 2012). Qualitative research provides an approach at simplifying and managing data without destroying complexity and context. Therefore, it was apparent to use the qualitative research in this study (Creswell 2014; Bryman 2012).

However, there are few downsides for choosing this approach. The main disadvantage of qualitative approaches is that its findings cannot be generalised to the wider population with the same degree of certainty of quantitative data. However, as this study is not intending to generalise the findings to a wider population, but rather to provide an in-depth understanding of this little explored concept, a qualitative approach is appropriate. Moreover, ambiguities in the human language used by the participants can be recognised in this approach. However, this approach is good at simplifying and managing data without destroying the complexity and context of the study (Teherani et al. 2015; Bryman 2012).

3.5.1 Three components involved in a Research approach

A research approach is a plan or proposal to conduct a research study. To make these plans into practical steps, three components need to be identified. They are the philosophical worldview, research design, and methods or procedures to conduct the research (Creswell 2014) and according to Creswell (2014), research approach is an intersection of the philosophical worldviews, research design, and methods.

3.5.2 Philosophical Worldview

The term 'worldview', chosen by Creswell (2014), means a "basic set of beliefs that guide action (Guba 1990, p.17)". It is the broad philosophical orientation of the nature of inquiry and the context that the researcher brings to her research. Others termed it as paradigms (Mertens 2010), epistemologies and ontologies (Crotty 1998), or broadly as conceived research methodologies (Neuman 2009). According to Guba (1990), paradigms are a set of beliefs that guide the researcher to do things. Paradigms can be characterised by their ontology, epistemology, and methodology. Ontology is a view of the nature of reality and what is "knowable", whereas epistemology establishes the nature of the relationship between the inquirer and the knowledge going to uncover or discover. The methodology is the way the researcher going to find out the knowledge and carrying out their research (Guba 1990).

Although there is an ongoing debate about the different worldviews and their role in the research, four major worldviews are discussed by Creswell (2014), which are widely considered in the literature. They are postpositivist, transformative, pragmatic and constructivist worldviews. Post-positivism is a worldview used in performing science research and is used widely for quantitative study. Moreover, a post-positivist uses reductionism to reduce their ideas into a small, discrete set of tests (Creswell 2014). As this study did not aim to adopt reductionism, this worldview was not appropriate for this study.

The transformative worldview is used in research aimed at bringing transformation in the society, which is intertwined with politics and political agenda. It is mainly used by critical theorists, participatory action researchers, Marxists, feminists and other oppressed communities. This worldview is often linked to research related to political and social actions (Creswell 2014). However, as this study did not aim to bring transformation, but rather to explore in depth the perceptions of older people about their social participation in the online world, this worldview was not appropriate for this study.

A pragmatic worldview focuses on the research problem rather than the methods, and researchers use all the available approaches to understand the problem. Therefore, pragmatism is considered as a philosophical underpinning mainly for mixed methods as it uses both quantitative and qualitative data to understand the research problem in detail (Creswell

2014). As this study is seeking to understand, in depth, individual experiences, and that quantification of facts had no place in this study, this worldview was not relevant to this study.

Constructivism is a worldview in which researchers interpret the meaning others have about a research problem and inductively develop a theory or a pattern of meaning. Social constructivists believe that individuals try to find the subjective meanings of their experiences towards certain objects or things. These meanings will be subjective and will differ from individual to individual. A constructivist researcher understands this and tries to identify the complexity of views rather than summarizing meanings into a small number of categories or ideas (Creswell 2014; Guba and Lincoln 1994; Crotty 1998). Therefore, this worldview leads the constructivists to adopt a qualitative approach as the best approach for enquiry. As the main aim of this study was to explore the subjective meaning participants provide to their online world social participation, this worldview was chosen for this study.

3.5.2.1 Constructivist worldview

According to Creswell (2014), the researchers should explain the three factors while writing their philosophical stance. They are the philosophical worldview proposed in their study, the definition of basic ideas of that worldview, and how the worldview shaped their chosen approach to their research. Social constructivists believe that individuals try to find the subjective meanings of their experiences towards certain objects or things. In this study, the researcher sought to understand the perspectives of participants and that is subjective and would be different for each individual, and the researcher would explore the distinctive views of individuals. Therefore, the constructivist worldview was adopted in this study.

The basic idea of constructivism is that humans construct meanings as they engage with the world, and a constructivist relies on a participant's view about the research problem or aspect (Creswell 2014). Therefore, the questions were kept as open-ended in this study so that the participants could share their views. Moreover, a social constructivist believes that the historical and cultural settings of the participants shape their views and therefore, the researcher normally tries to understand the participants' backgrounds and context. Furthermore, the researchers recognize that their background shapes the interpretation of the data and therefore, they position themselves in the research to acknowledge how their interpretation flows from their personal, cultural and historical experiences (Creswell 2014).

Therefore, in this study, participants' perceptions were explored, which are subjective to each individual, and the underlying context was taken into consideration. Moreover, this study aimed to keep the complexity of the data to preserve the diverse views of participants, rather than deducting it into a quantifiable result. These led to a qualitative approach being adopted for this study, with a constructivist worldview as the underpinning philosophical stance.

3.5.3 Research design

There are some defined methodological designs for qualitative research. They are mainly narrative inquiry, grounded theory, ethnography, phenomenology and case study (Creswell 2014). Most of the qualitative studies tend to fit to one of the above particular research designs. However, there are some studies that seek to explore the perspectives of the people involved in the study without building theory or examining the cultural rules. This research approach is called generic qualitative research (Cooper & Endacott 2007).

The different designs and the rationale for choosing a research design for this study are discussed briefly in this section. Narrative research is a design in which the data is collected as the stories of the participants and are often retold or re-iterated by the researcher (Riessman 2008; Creswell 2014). However, it was anticipated that people's experiences of the online world would be intertwined with other aspects of their life, and it would be difficult to separate their online narrative from their entire life narrative, so this design was not chosen to conduct this research.

Phenomenological research is a design of inquiry in which the researcher describes the lived experiences of individuals about a phenomenon as described by the participants. As this study explored the views of older people in participating in different social activities in the online world rather than narrowing it down to an experience of a single activity (e.g. Facebook, Skype), this approach was not chosen to guide this study (Creswell 2014; Moustakas 1994). Grounded theory research, as the name states, is based on constructing or testing theories. The researcher derives a theory on the basis of the data collected. However, this research does not involve the construction of theories, but rather aims to explore the perceptions of older people about their online world social participation, and therefore, this design was not adopted in this study (Charmaz, 2006; Corbin & Strauss, 2007).

Ethnography is a design of inquiry where the researcher studies the shared patterns of behaviors, language and actions of a group of people in a natural setting for the prolonged time. Observation and interviews are the common methods adopted in this design to collect the data (Creswell 2014). As this study focused on the perceptions of the older people, observation and understanding the usage of the online world is irrelevant, and therefore this design was not chosen for this study. Case studies are a design of inquiry in which the researcher carries out an in-depth analysis of a case, often a program, an event, an activity, or process, on one or more individuals (Yin 2003). As this study focused on the perceptions of older people in the online world without focusing on a activity or case, this design was not chosen for this study. There are other qualitative research designs such as critical approach, which are mainly used in action research and feminist studies that emphasized change as a part of the research, and therefore the participants play a key role in the design of the study (Cresswell 2014). However, critical research does not form any part of this study and therefore has not been discussed in detail.

Generic qualitative research is an inquiry to research that exhibits some or all of the characteristics of a qualitative study. However, it focuses on gaining an understanding of the experience of an event or aspect, rather than focusing the research through the lens of known research design. The research sought to explore the perspectives of the people involved in the study without building theory or examining the cultural rules. This research design is called as generic qualitative research (Cooper & Endacott 2007). This study is an exploratory study, and the main focus was to gain an understanding of the perceptions of older people about their social participation in the online world. Therefore, this study claimed no allegiance to any particular set research design, but rather followed the generic qualitative approach as a research design to the study.

3.5.3.1 Generic Qualitative Research

Caelli et al. (2003) suggests that generic qualitative research is an approach to research that exhibits some or all of the characteristics of a qualitative study. It focuses on gaining an understanding of the experience of an event or social aspect rather than focusing the research through the lens of known research design. However, generic qualitative research either combines principles of several research designs or claims no particular research design viewpoint (Kahlke 2014). Generic qualitative inquiry is used to report a participant's subjective

opinions, attitudes, beliefs, or reflections on their experiences, of things in the outer world. As this study aimed to explore participants' perceptions about their online world social participation experience and required a qualitative approach to answer the research questions and did not fit within other designs, generic qualitative design was used in this study.

The main highlight of this research design is that it provided flexibility for the researcher in focusing more on the participants' meanings and experiences rather than fitting the data into a predefined set of research design. Studies of this type do not declare allegiance to any of the research design and take a general approach towards addressing the research questions (Cooper & Endacott 2007). Lim (2011) argued that a tendency towards flexible research designs are natural and inevitable. It is a need to develop new research designs that fit new studies rather than fitting the research study to a particular design.

Denzin and Lincoln (2005) explained that working outside of established research designs offers a way to open up space for new angles and new types of questions, which is another notable feature of this research design. Researchers using generic design can use the tools that established methodologies offer, and develop research designs that fit their epistemological stance, discipline, and particular research questions (Cooper & Endacott 2007; Kahlke 2014). In the opinion of Kahlke, by making use of "textures" or "overtones" at epistemological and theoretical levels (Neergaard et al. 2009), or procedures and techniques at the method-level (Hunt, 2009; Thorne et al., 2004), generic qualitative research can portray the strengths of established methodologies.

There are many critiques around the generic qualitative design. These criticisms centre a vigorous and longstanding debate about the rigor in qualitative research. The main limitation of generic qualitative research design is that it does not have set procedures to carry out the study and therefore it can possess a theoretical void, which affects the quality of the study (Kahlke 2014). However, Caeli et al. (2003) have suggested ways to overcome these limitations, which are applied in this study to establish its quality. Another notable limitation for this research design is that it lacks a robust critical literature that would refine approaches and offer guidance to researchers (Caelli et al., 2003; Hunt, 2009). Moreover, critics argue that "mixing" elements of established methodologies can lead to incongruence between the

elements of the framework. In order to overcome these limitations in the generic qualitative study, Caelli et al. (2003) suggested four guidelines that are to be considered while conducting a quality generic qualitative study. They are:

- Theoretical positioning of the researcher
- Congruence between methodology (Research Approach in this study) and methods
- Strategies to establish rigor
- Good analytic lens through which the data is examined

These four guidelines were followed and are explained in this study. However, this chapter is not set in the order mentioned above but includes all the above four guidelines to ensure the quality of the study. The next section explains the method used to collect data to address the research questions. As stated above, in order to achieve the quality of this study, congruence between the research approach and methods should be maintained. As the research approach chosen for this study was qualitative research approach, a method that fits within the approach was chosen to collect the data for this study.

3.5.4 Methods

Methods are tools to collect data from the participants. There are many methods and interviews are one of the most common qualitative methods used to gather data from participants. The main advantage of using this method is that it can be flexible and interactive, allowing researchers to enter into another person's world, and understand their perspectives (Measor 1985; Silverman 2010). As this study aimed to explore the perceptions of the participants, interviews were the appropriate data collection method for this study. Moreover, Cohen et al (2007) suggest that interviewing is “a valuable method for exploring the construction and negotiation of meanings in a natural setting”. This study aims to explore the meaning older people attribute to their online world usage, particularly during social participation, and the research approach chosen to guide this study was a qualitative approach. Therefore, a method congruent with this approach was employed to conduct this study and the interview method allowed exploration of the meanings and experiences of the participants, and therefore, this fitted within the approach.

Additionally, Dornyei (2007) argues that the presence of the interviewer to collect the data at the time of interview is very helpful in gaining more detailed descriptions from the participants. As this study required a deeper understanding about the perceptions of older people, this method would have been appropriate. Moreover, mutual understanding can be established between the interviewer and the participants, and the interviewer could rearticulate or simplify questions if required. This would enable the interviewer to collect more suitable answers and, subsequently, precise data. The interview data can be recorded and reviewed several times by the researcher for an in-depth and detailed analysis (Berg, 2007).

However, like any other research tool, interviews have a few drawbacks. Robson (2002) suggested that interviews can be a very time-consuming process, as the interview data needs to be transcribed, coded, and in some cases, translated. However, in this study, no translation was required as inclusion criteria involved the ability to communicate in spoken English to a level sufficient for participation in an interview, although fluency was not required. Also, some of the interviews were transcribed by professionals to avoid delays in the process. Moreover, there was a potential for biased information, as well as a potential for inconsistencies in the collected data, which can occur while using this method (Robson 2011). However, planning the studies appropriately and understanding and managing the possibility of bias and inconsistency helped to overcome the drawbacks of this method.

There are several ways to carry out interviews to collect rich data. The most popular way of carrying out interviews are face to face, however, they can also be conducted over the telephone or online (Bryman 2012). Some of the older people participating in this study will be carrying out social activities in the online world, and they will most likely be comfortable and capable of communicating using online tools. Therefore, in this study, interviews were planned to be conducted face to face, either in the physical world or in the online world.

As this study aimed to explore the perceptions of older people, it would be difficult to employ asynchronous online interviews conducted using emails due to the need for many numbers of email exchanges. Moreover, there would be an opportunity to miss richer information due to short email responses (Opdenakker 2006). Therefore, the online interviews were synchronous interviews, conducted using Video conferencing applications like GoToMeeting

software, so that clarifications can be sought if required, and also this helped in gaining more detailed descriptions from the participants. Therefore, during the data collection process, participants were provided options to choose the online interviews or face to face interviews. However, all participants opted for the face to face interview.

There are several types of interviews used by the qualitative researchers. Intensive interviewing is a type that permits an in-depth exploration of a particular topic or experience. The in-depth nature of intensive interviewing promotes extracting the participant's interpretation of his or her meaning or experience (Charmaz 2006). Therefore, in this study, intensive interviewing is employed and it permits an in-depth exploration of the perceptions of older people about their social participation.

The structure of the intensive interview can vary from unstructured to semi-structured interview (Charmaz 2006; Robson 2011). The research participants expect interviewers to ask questions that provoke reflections of the topic. Semi-structured interviews provide a guide for the interviewer to ask questions about the topics that need to be covered. It provides flexibility of wording and order of the questions to be asked (Robson 2011). Moreover, a semi-structured approach helps to achieve a balance between the researcher and the participant-driven content, and to focus more on the topics at the same time as maintaining an engagement with the participant (Roulston 2010). Therefore, a semi-structured interview was used in this study to explore the perceptions of the participants. Semi-structured interview enable the identification of the true reflection of their experience and to focus more on the topics at the same time as maintaining an engagement with the participant, which ensured credibility for this study, leading to establish rigor in qualitative studies.

However, some open-ended questions were asked at the beginning of the interview process, as the philosophical underpinning for this study is constructivism and constructivists believe that subjective meanings of individual experiences towards certain objects or things depend on their cultural and historical norms. Therefore, it was vital for the researcher to understand some background information about the participants (Creswell 2014). Therefore, some open-ended questions were asked in order to understand the background information of the participants regarding their name, age range (65-70; 70-80; and 80+), social networks in the physical and in the online world, participation and use of technology devices, their previous

computer knowledge, and living settings. It helped the researcher to gain an understanding of the social context of the participants. This background information helped to decide the transferability of this study to other contexts or settings, thereby establishing rigor in this study.

Moreover, the contextual knowledge is essential for understanding the meanings that participants make of their experience. Writing notes enables capture of the researcher's thoughts and connections to the themes and codes that the researcher draws during the interview and the analysis process. Therefore, writing notes about the context, culture, and rapport about the interview enabled the researcher to construct the meanings the participants provided in their data (Morrow 2005). Therefore, the notes were taken by the researcher in this study about the context, culture, and rapport of the interview. One interview was conducted with each participant, and the duration of the interview lasted no longer than an hour and a half. In this study, 20 semi-structured interviews were conducted face to face at participants' homes.

3.6 Preparing for fieldwork

This section outlines the main procedures carried out for conducting this study.

3.6.1 Ethical Approval

Ethical issues anticipated by the researcher throughout the research process were addressed before conducting the research. Human participants were involved in this research, and therefore this research was conducted after receiving the ethical approval from Bournemouth University Research Ethics Committee. The approval application was submitted. The researcher was called to the Ethics Committee meeting for a short interview. The researcher convinced the Committee that the ethical issues of the research process were addressed and the Committee granted permission to conduct the study.

The recruited participants were provided with an information sheet, which outlined the details of the study and the role of the participants in the study (Appendix 1). The information sheet was provided as a hard copy, and some were sent as a digital copy through email, where they could download and print it. If the participants were still interested in participating in the

research after reading and understanding the information provided on the information sheet, a written informed consent was obtained from the participants (Appendix 2).

The participants were fully informed about the study before the interview by an oral briefing, conducted along with the information sheet. The information sheet also contained the contact details of the researcher (in case they had any further questions), and the first supervisor (in case they had any concerns). Moreover, the sheet contained information about how the data would be used and an account of their right to withdraw from the study at any stage of the interview without explanation. It was clarified to the participants that their involvement was completely voluntary.

Minor physical risks to the researcher while conducting the research were identified, predominantly relating to traveling to and from the interview and going to the people's homes alone. The researcher informed a close friend before entering the home and reported back after completing the interview.

Questions were asked by avoiding sensitive information and were in line with the Bournemouth University Research Ethics Code of Practice. However, in order to gain an understanding of the social context of the participants, some personal data was collected at the beginning of the interview. This included their name, age range (65-70; 70-80; and 80+), social networks in the physical and in the online world, participation and use of technology devices, their previous computer knowledge, and living settings. The collected personal data was handled ensuring privacy and confidentiality. In order to respect the privacy and anonymity of the participants, pseudonyms were assigned when analysing the data. The collected data was stored safely and securely as hard copies and soft copies.

3.6.2 Sampling

Sampling is the process of choosing participants to address the research questions (Bryman 2012). The purposive sampling is used in this study to recruit participants for the semi-structured intensive interview. Purposive sampling is a form of nonprobability sampling in which the participants were not randomly or conveniently chosen. Instead, the participants who met the criteria designed by the researcher were chosen. The sampled participants were more relevant to answer the research questions. The researcher clearly stated the inclusion or exclusion criteria relevant to their study (Bryman 2012).

Therefore, the inclusion criteria outlined for this study were:

- ***Age should be 65 or over:*** In the UK, a chronological age of 65 is accepted as the phase of entering old age. Therefore, the participants chosen for this study were people aged 65 or over. All the 20 participants recruited for this study were in the age range from 65 to 85+.

- ***Living in their own homes:*** Out of 10.8 million older people, 7.3 million people are living in their own homes containing no one under 55 with them (Office for National Statistics 2013).Therefore, focusing on the majority of the living arrangements of the older population, the participants of this study were older people living in their own homes. All the 20 participants recruited for this study were living in their own homes. However, most of the participants were living in flats rather than houses.

- ***Social participation:*** The participants of this study should be involved in any forms of social participation in the online world or in the physical world ranging their participation from not active to very active. The term social participation in this study includes participating in any activities that involve social contacts or contributing resources to the society or accessing resources from the society. Out of 20 participants recruited for this study, 18 participants used the online world for social participation along with their physical world social participation. One was using online world very occasionally with the presence of family members and one participant was involved only in physical world social participation.

- ***Language:*** Participants should be able to communicate in spoken English to a level sufficient for participation in an interview (fluency not required).

- ***Mental Capacity:*** The participant should have the mental capacity to provide informed written consent to participate in this study.

3.6.3 Recruitment

The recruitment of the participants in the qualitative study was identifying the appropriate participants for the study and inviting them to join in the study (Given 2008; Walker 2012). As this study adopted a purposive sampling method, the participants successfully met the criteria outlined by the researcher and were recruited to this study. At the beginning of the study, the

researcher was looking to identify potential participants and emailed friends and a charitable organisation. Participants for this study were recruited through Help & Care charity and by word of mouth.

3.6.3.1 Help and Care charity

Help and Care charity responded and offered their support to recruit participants to this study. Help and Care charity is a nonprofit charity helping vulnerable people, especially older people, to live independently in their own homes. The main vision of this charity is to support people living the lives they choose. This charity was founded in 1985 and has since flourished and grown into an organisation that promotes dignity and independence for all people, particularly those in later lives. They offer services mainly in Dorset and across the South Coast. The main services include providing people in need with the right information, advice and support that will enable them to take control of their life, make decisions and find support that is right for them (Help & Care website 2019).

The researcher was invited to discuss in detail about the study with the concerned person. The gatekeeper information sheet (See Appendix 3), participant information sheet (See Appendix 1) and consent form (See Appendix 2) was given, and the researcher explained about this study in the meeting. The concerned person then contacted a few people who met the eligibility criteria. The concerned delegate from the charity forwarded the details of the participants who agreed for the study to the researcher.

The participants were contacted by the researcher over the phone, and the participant information sheet and the consent form were sent by post and email, according to the participant's choice. The participants were given adequate time to read the information sheet and decide. Interested participants were then contacted by the researcher through the gatekeepers or directly approached by the researcher.

The researcher contacted the participants after a week or so and discussed with them about their participation and a date, time and venue were agreed. The participants were given full freedom to withdraw from the study, and the researcher tried to provide complete flexibility for re-arranging the interviews. All the recruited participants were given an information sheet, stating the details of the research, and the written informed consent forms were obtained from the participants before conducting interviews.

Apart from the Help and Care charity, the researcher further made contact to recruit people to the study. A friend of the researcher who was actively engaged in a bowling club helped with the recruitment. A flyer was designed, which stated a brief overview of the study, along with the eligibility criteria, and was distributed among the club members. Interested participants contacted the researcher by email. A participant information sheet and consent form were sent out through email, and the interested participants were contacted and agreed on a date, time and venue for the interview.

3.6.3.2 Recruitment area: Dorset

With the support from Help & Care charity and by word of mouth, 20 participants were recruited to this study. All the participants were from Dorset area. Dorset is a county in South West England, United Kingdom. It comprises of six districts: the borough of Christchurch, East Dorset, North Dorset, Purbeck, West Dorset, and the borough of Weymouth and Portland. Apart from areas covering Bournemouth and Poole in the south eastern corner of the geographic county, Dorset is mainly rural (The Editors of Encyclopaedia Britannica 2017). Dorset remains as one of the main destinations of choice for retirees in the UK due to its natural beauty. By 2030, only half of the Dorset population is said to be of working age (Minocha & Hristove 2018). Out of the total population in Dorset, 28% were aged 65+, significantly higher than that of the UK average of 18% (ONS 2017) and is projected to increase in the coming years. Participants of this study included people living in the town as well as in the villages of Dorset.

3.6.3.3 Saturation & Sample size

The sample size in qualitative research should not be as small as to make it difficult to achieve saturation or too large that it is hard to undertake a deep analysis (Onwuegbuzie & Collins 2007). Crouch & McKenzie (2006) suggests that a sample size of 20 will help the interviewer to perform deep analysis and provide more chances for closer involvement with the participants. However, as qualitative research is a flexible approach, the sample size of this research should be flexible depending on the saturation achieved to answer the research questions and generate concepts. Twenty participants were interviewed to collect data for this study.

Saturation is a concept used by the researchers to ensure that they have adequate and quality data for their study. It is a stage at which further collection of data would not add any novel information to the study (Walker 2012). There are no definite rules or systematic procedures to attain saturation (Bowen 2008). However, most qualitative researchers state that they achieve saturation once the information becomes repetitive (Walker 2012). Therefore, this study ceased further recruitment of participants once a rich data set was obtained where further interviews would be adding little information to the study.

This study recruited 20 participants for conducting the interviews. All the participants were given options to choose the face to face or online interview. Twenty participants opted for face to face interviews. After conducting 16 interviews, the data seemed to be repetitive. However, four more interviews were conducted to ensure rich data was obtained.

3.6.4 Interview data

The data collected from 20 face to face interviews was recorded using an electronic voice recorder. The recorded speech data was transcribed into a text format. The researcher transcribed 8 interviews. This enabled the researcher to understand the process and data. Due to the time limitation, 12 interviews were transcribed by a professional transcriptionist. This helped to avoid delays in the research process. The transcribed data, along with the notes of the researcher about the context and rapport of the interview and open-ended questions taken during the interview, contributed to the rich data for analysis in this study. This helped in understanding the context of the study and to establish credibility and dependability of the study. This is discussed in detail in section 3.8.

3.7 Data Analysis

Qualitative data analysis techniques are varied and complex. Thematic analysis is one of the widely used data analysis techniques in a qualitative study. “Thematic analysis is a method for identifying, analyzing and reporting patterns (themes) within the data” (Braun & Clarke 2006). “A theme captures something important about the research question and represents some level of patterned response or meaning within the data set” (Braun & Clarke 2006, p82). Thematic analysis enables researchers to use a variety of information to understand and interpret the data. In the thematic analysis, the related themes were developed into codes,

and interpretation of these codes results in generating categories or concepts or a conceptual framework (Boyatzis 1998).

Thematic analysis was chosen for this study because it is one of the significant analytic methods used for qualitative studies. Moreover, thematic analysis is not "wedded to any pre-existing theoretical framework" (Braun and Clarke 2006, p. 81). Furthermore, this analysis technique is not predetermined to an epistemological position such as grounded theory, or interpretive phenomenological analysis (Braun and Clarke 2006). Relatively, it is independent of theory and epistemology and thus appropriate to be applied in a generic qualitative study (Braun and Clarke 2006).

Moreover, Caelli et al. (2003) mentioned that a strong analytical lens towards the data would help to extract the outcome of the data collected. This helped in this study to interpret data in accordance with the participants' perception. It is considered as an important way to maintain the quality of the generic research design. Clear processes outlined here along with the reflexivity of the researcher helps to achieve the quality of the data in this study. Moreover, the thematic analysis offers a flexible and practical research tool, which can potentially offer a rich and detailed, yet complex amount of data (Braun & Clarke 2006). Therefore, thematic analysis was carried out in this study to generate themes.

There are mainly 6 phases followed in conducting the thematic analysis. These were carried out in order to conduct the analysis in a logical manner. The figure 3 shows the phases involved in thematic analysis and its description adopted from Braun and Clarke (2006).

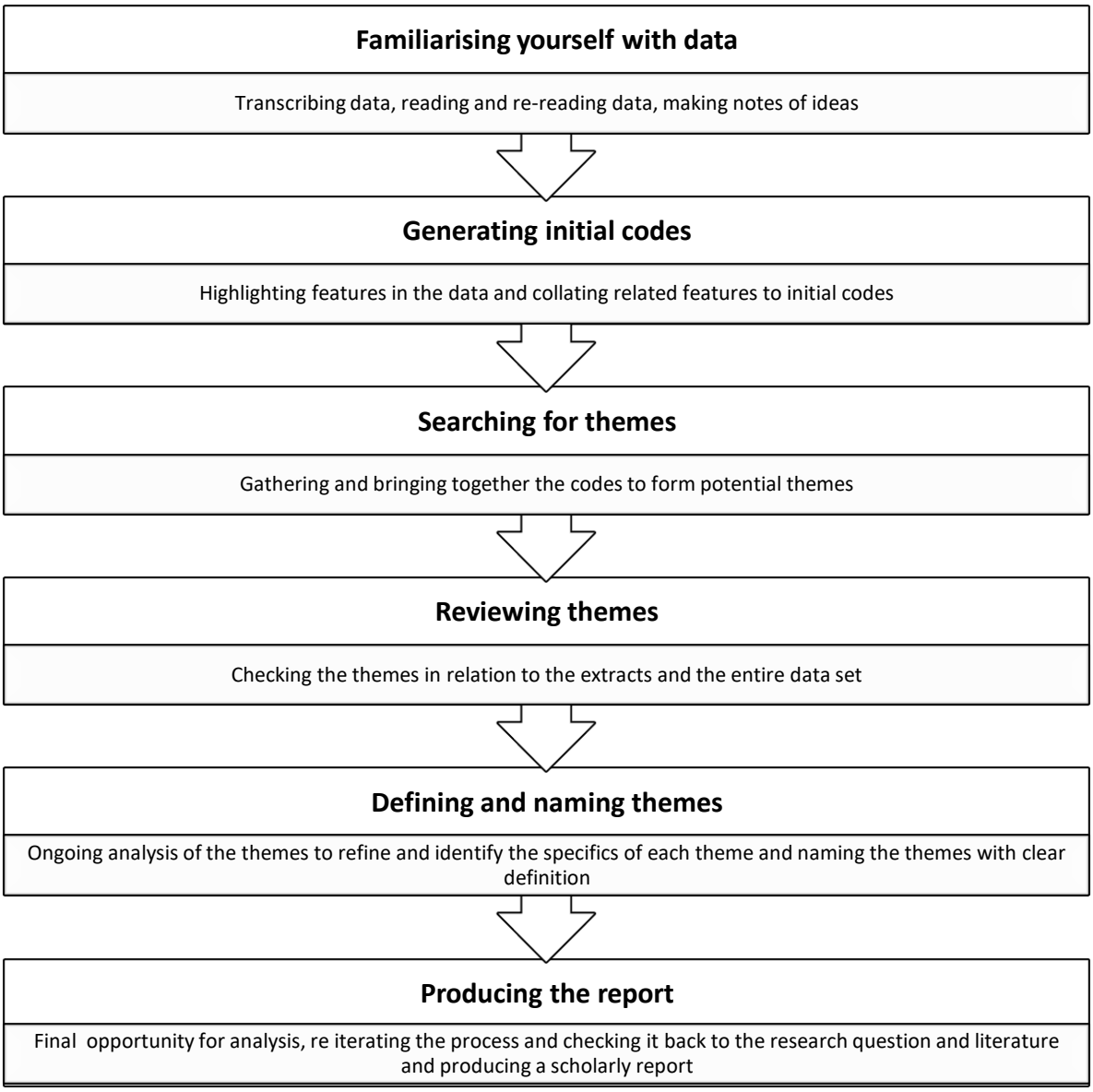

Figure 5. Phases involved in thematic analysis and its description (Braun & Clarke 2006)

The practical applications of the phases are discussed below.

- ***Familiarizing with the data:*** The interviews for this study were conducted face to face with the researcher and participant and therefore, the researcher had some prior knowledge of the data and some ideas regarding the data. Eight interviews were transcribed by the researcher and the remaining twelve by a professional. However, repeated reading of the transcribed data helped to familiarize all the aspects of the data. Notes were taken at this stage, which was used for coding (Braun & Clarke 2006). The data from the 20 transcripts were read 3 times by the researcher, and the notes were written.

- ***Generating initial codes:*** After repetitive reading of the data, this stage involves the production of initial codes. Codes are the elements of the raw data that can be assessed in a meaningful way (Boyatzis 1998). These codes are inductively developed, from the data collected during this study. Coding is organising the data into meaningful categories or groups. After careful reading, the data is categorised into 7 groups. They are the demographics, devices, computer learning and usage history, online world social activities, and physical world social activities, Effects of social participation and issues/concerns of the old people about their participation in the online world.

The data was coded into each of these groups. The demographics group contained the basic demographic data of the participants such as sex, location, marital status, living condition (living alone or with family), age, and a brief description about their family. The devices group gave an overview of the number of devices and which devices they were using.

The computer learning and usage history gave the period of their computer usage and how they learned the computer. Online world activities provided the details of their online world activity and physical world activities provided the details of the physical world activity. Effects of social participation provided details about the connectedness and other effects relating to the subjective well-being they experienced using the online world. Finally, issues and concerns were the groups where participants provided the factors affecting their participation in the online world. An example of a data extract with codes applied is given below.

Data Extract	**Code**	**Categories or groups**
"PayPal got muddled somehow or other. And it doesn't recognize my password anymore so you wouldn't get all sweetness in to properly."	1. Access ***issue*** encountered 2. Used ***online payment activity*** but stopped due to an issue	Issue/Concerns Online world activity

Figure 6. Example of a data extract with codes applied

- ***Searching for the themes:*** At this stage, the codes are sorted and collated to potential themes (Braun & Clarke 2006). The codes in each of the 7 groups were then

assembled together to generate themes. Themes are often broader than codes and are developed in the more interpretive phases of analysis (Braun and Clarke 2006). This involved analysing the codes and considering where various codes came together to form an overall theme.

- **Reviewing the themes:** At this stage, the themes were reviewed and discussed, and further refinement of themes was carried out (Braun & Clarke 2006). The themes generated from this study was discussed with the supervisors and reviewed. Some themes combined to form one theme (Braun and Clarke 2006) and they remained as sub-themes. In this way, it began to show clear characteristics between themes and meaningful rationality within the themes. At this stage, the entire transcript was re-read to ensure that each theme precisely incorporated the meanings in the large data.

- ***Defining and naming the themes:*** At this stage, each theme is named and defined in detail. The essence and aspects of each theme was clearly demonstrated (Braun & Clarke 2006). Four main themes were identified at this stage and are discussed in detail in the findings chapter.

- ***Producing the report:*** This is the final stage at which a concise, coherent, logical and interesting account of the data is produced (Braun & Clarke 2006). The discussion chapter discussed the research questions of this study from the themes generated.

3.8 Establishing Rigor

Establishing rigor for the data collected by the qualitative study is important to validate the study. Caelli et al. (2003) suggested that making an explicit approach to rigor is an important requirement for a study that does not fit to a specific research design (e.g. phenomenology or grounded theory) to enhance the quality of the research. However, there are debates over the past decades about what represents quality criteria in qualitative studies. The concepts of reliability, validity and replication are applied to enhance the quality of the research but are more related to the quantitative study (Kirk & Miller 1986).

Caelli et al. (2003) stated in their paper that in recent years, there have been efforts to consolidate rigor by many qualitative researchers and Lincoln and Guba (1985) are two of the

important pioneers that evaluate rigor in qualitative research. According to Lincoln & Guba (1985), the ways of assessing qualitative research should be different from the quantitative and they proposed trustworthiness as a criterion for establishing rigor for qualitative research.

3.8.1.1 Trustworthiness

Trustworthiness in a qualitative study is achieved using credibility, transferability, dependability, and confirmability, which are known as parallel criteria (Lincoln & Guba 1985). These criteria are applied in this study to establish rigor and are discussed below.

3.8.1.1.1 *Credibility*

Credibility can be enhanced by thorough descriptions (Lincoln & Guba 1985; Morrow 2005). Descriptions in this study involve the data collected from the intensive interviews, open-ended questions collected to understand the background information of the participants regarding their social networks, participation and use of technology devices, and the notes taken after each interview explaining the context of the interview. Combining all this data provides a rich dataset for the study.

Ensuring that saturation is achieved during the collection of data is another important factor that contributes to the credibility of the study (Cooper & Endacott 2007). After conducting sixteen interviews, four more interviews were conducted to ensure that no new themes were emerging. Moreover, the themes generated were reviewed and discussed with the supervisors, and the data was revisited by the researcher to make sure no new themes were emerging. It contributed to the credibility of the study.

Furthermore, peer debriefing was employed in this study to ensure credibility. It is a process of explaining the research to a person not involved with the study (Lincoln & Guba 1985). This allowed the researcher to have a fresh pair of eyes into the themes generated and questioning the links between the themes.

3.8.1.1.2 *Transferability*

Transferability refers to the generalisability of the result into a wider population. Due to the sample size and lack of statistical analysis, qualitative data cannot be generalised to a wider population. However, in qualitative research, it may be possible for case-to-case transfer (Tobin & Begley, 2004). This can be achieved by demonstrating the intensive rich data along

with the background of the participants, context and researcher's background to help the reader to decide how the findings can be transferred and applied to the relevant population (Lincoln & Guba 1985; Morrow 2005).

This study aimed to explore the perceptions of older people and it always varies to an extent, and different factors contribute to their perceptions. Therefore, the researcher, when explaining the finding, has outlined the context and background of the participants to give an overview of the factors that contributed to the participants' social participation in the online world. Moreover, the researcher's background that shaped the study is also described in the next section, which will contribute to the decision in transferring the findings to a wider population.

3.8.1.1.3 *Dependability*

Dependability can be achieved in qualitative research by indicating the consistency and detailed description of the processes of the study. This can be achieved by a good analysis technique (Lincoln & Guba 1985; Morrow 2005). The thematic analysis used in this study helps to achieve dependability. Using a recognized model of analysis, the repetitive reading of the data, reviewing the themes with the supervisors and peers and revisiting the data helped to achieve the dependability. Moreover, explaining the research process helps the readers to analyse the dependability of the research (Lincoln & Guba, 1985). Therefore, the research process was explained in this thesis.

3.8.1.1.4 *Confirmability*

Confirmability can be achieved by presenting the findings as openly as possible (Lincoln & Guba 1985; Morrow 2005). The reality of the world is complex and the complexity of the analysed data will be maintained by explaining the concepts generated as a result of the analysis rather than summarizing the data into theories. This helped to achieve confirmability in this study. According to Guba and Lincoln (1989), confirmability is achieved when the study established credibility, transferability, and dependability. Reviewing the themes with the supervisors and revisiting data also helped to achieve dependability as well as confirmability.

Peer debriefing with colleagues with impartial views of the study was carried out at different stages of the study (Lincoln & Guba 1985). The peers inspected the researcher's transcripts, final report and research methodology to identify the minimum intrusion of the researcher in

the data collection and analysis stage. The research findings will be made available to the participants and the public as publications to enhance confirmability (Bryman 2012).

In addition to the trust worthiness criterion, this study also fulfilled the four guidelines suggested by Caelli et al. (2003), that are to be considered to establish rigor in generic qualitative study. The suggestion were to acknowledge the theoretical positioning of the researcher, choosing a congruent method to collect data, good analysis technique and strategies through out the study to establish rigor.

3.8.2 Theoretical positioning of the researcher

According to Creswell (2014), constructivist researchers acknowledge that their backgrounds and interpretations that influenced the research and therefore, the researcher should explain their position in the research and about their influences that shape the study. Moreover, Charmaz (2014) suggested that the researcher's involvement in the construction of the data or interpretation of the data is inevitable. It is a reality and cannot be completely ignored but needs to be acknowledged.

Furthermore, according to Caelli (2003), the theoretical positioning of the researcher should be explained. She argued that motives for a researcher in engaging with a study are never a naive choice and therefore, the researcher's motives, presuppositions and personal history that shapes the study should be explained to achieve reflexivity of the study.

Two aspects of the researcher's background have directed relevance for shaping this research. Firstly, the work experience of the researcher with older people and secondly the educational background in IT influenced the researcher to curiously investigate the social participation of older people in the online world. Initially, the investigation was focusing on the social participation of older people in the online world only. However, the further study on the topic identified the fact that the social participation of older people is more concentrated in the physical world along with the online world. This led the researcher to identify the importance of understanding the perspectives of older people about their social participation in the online world relative to the physical world.

3.9 Summary

This chapter outlined the research methodology adopted in this study. As the main aim of this study was to explore the perceptions of older people about their social participation in the online world and its effect on their physical world social participation, a qualitative research approach was chosen to guide this study forward, with a constructivist worldview as the underpinning philosophical stance for this study. In this study, the researcher sought to explore the perspectives of the people involved in the study without building a theory or examining the cultural rules, and therefore, a generic qualitative research design was adopted.

After gaining ethical approval from the Bournemouth University Ethics Committee, 20 participants were recruited to this study through Help and Care charity and by word of mouth. Interviews were conducted to collect the data from the participants. Collected data was transcribed and then analysed using thematic analysis. In order to achieve the quality of the data, adequate steps were taken during data collection and analysis to establish trustworthiness. Finally, the researcher's motives, presuppositions and personal history that shaped the study was explained to achieve reflexivity of the study.

According to Caelli et al. (2003), the four main key areas that need to be addressed by a generic qualitative researcher to ensure the quality of the study are the theoretical positioning of the researcher, the congruence between methodology and methods, the strategies to establish rigor, and the analytic lens through which the data is examined. All these four areas were addressed in this chapter with high importance to ensure the quality of this study, although not necessarily in this order. The next chapter explains the findings generated from the data collected for this study.

4 Findings

4.1 Introduction

This chapter will report on the main themes and findings obtained from this study. As stated before, the main aim of the study was to explore the perceptions of older people about their social participation in the online world relative to their physical world social participation. Furthermore, the study explored the social connectedness and subjective well-being older people experienced during their online world social participation. Twenty semi-structured interviews were carried out to obtain the data. Thematic analysis was performed, and themes were generated from the transcribed interview data. The next section will explain the demographic information about the participants. Detailed explanation of the participant's demographics will enable readers to understand the differences and similarities in the context of the participants.

4.2 Data demographics

This section provides the demographics of the data collected. This will help to understand the context of this study. Enough people responded from the Dorset area to take part in the study. Therefore, the data was collected from 20 participants living in the Dorset area. Although, the participants belonged to Dorset, six participants lived in different villages and fourteen participants lived in town areas. Nineteen participants were living in their own homes, whereas one participant was living in a council home. Out of twenty participants, nine participants were living alone whereas eleven were living with their partner/husband/wife. Participants included five couples. However, interviews were conducted separately for them without the presence of the other participant in the room. The participants were recruited with the help of 'Help and Care' charity and by word of mouth. The participants included thirteen females and seven males. A graphical representation of participants by gender is given on the next page.

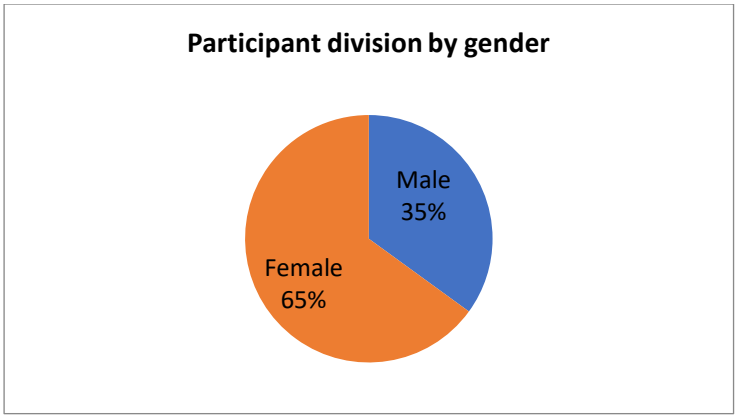

Figure 7. Graphical representation of participants by gender

Out of 20 participants, 19 participants owned a device capable of connecting to the internet. However, only eighteen participants were using the online world whereas one did not own a device and hence was unable to access the online world, and one participant did not use the online world on her own or was a very rare user, although owned a device and internet connection. These figures showed that 90% of the participants in this study were using the online world.

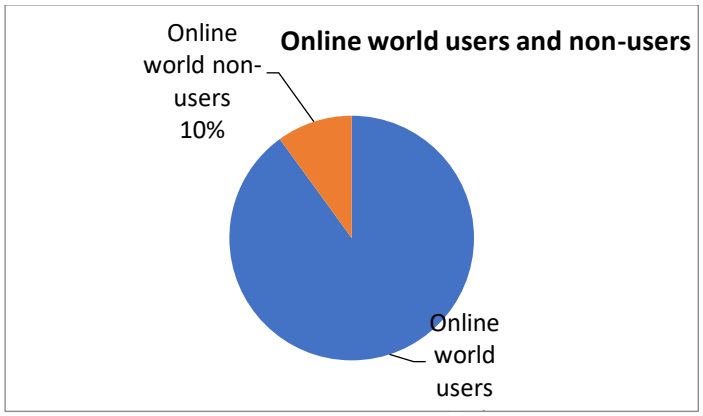

Figure 8. Graphical representation of online world users and non-users

Six participants were aged between 65-70, six participants were aged between 70-75, three participants were aged between 75-80, and five participants were 80+. Out of five participants in the above 80+ age group, two participants belong to the 85+ age group, which belongs to the 4th generation. However, this group was not separated from other age groups in this study.

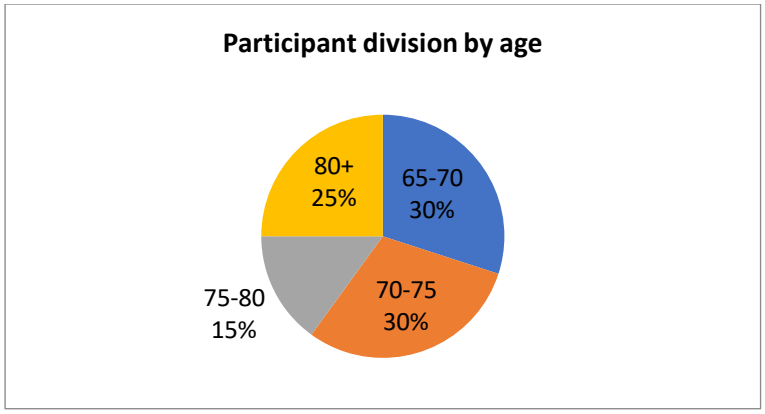

Figure 9. Graphical representation of participants' division by age

The 18 participants of this study were using the online world. However, differences in how they were using it emerged from the research. Many participants used the online world to actively engage in different activities and were active users, whereas some occasionally used the online world just for browsing and information gathering a few times in a week and were passive users of the online world. Many participants owned more than one device to access the online world. Fifteen out of twenty participants owned more than one device, such as a laptop, desktop computer, tablet or smartphone, whereas four people owned one device, and one participant owned no device to access the online world. In most cases, an increased number of devices showed the higher participation of the participants in the online world.

Five participants learned from computers in the library, whereas thirteen participants learned the basics from work, family members or carers, and all of them improved their skills from self-learning. All the participants of this study were retired from active employment. Out of 20 participants, 18 were using and very much appreciated the online world as a part of their life now, which is helping them to actively live a retirement life. However, one participant who has no access to computers as her computer was not working was looking forward to buying a new tablet in the future, and the other participant, who did not know to use the online world, was gifted with a tablet by one of her family members, and they were trying to get her online. Therefore, these two participants who were not using the online world may engage with it in the future.

Although there are greater numbers of people using the online world, the amount of time and the type of activity they are engaged differs. The table given following provides the demographic details of each participant and their online world usage frequency, nature of the

usage, and the number of activities they are engaged in the physical world. In the nature of the usage, some were novice users who considered themselves as a beginner or still learning basics, a few were intermediate users who were not quite competent but more than a novice user, and others were competent users who were experts in the activities they are engaged with in the online world.

SL.NO	Pseudo-nym	Age Range	Sex	Living condition	Number of devices owned	Devices	Frequency of the internet usage	Internet usage	Usage history	No: of Physical world social activities
1.	Mrs. E	80-85	Female	Married, Living with husband	2	Desktop, Laptop	Few times weekly	Problems encountered with the usage due to computer being too old and hesitant to use the new available laptop. Competent in MS Office but novice internet user.	Not used at work. Studied after retirement from library course.	0-3
2.	Mrs. K	75-80	Female	Widowed, Living alone	1	Tablet	Daily	Learning to use her tablet. Exploration daily. Finds it useful. Worries about security in social networking sites and breaking of device. Novice internet user.	Not used previously. New to internet and tablet. Self-learning and support from daughter and friends	3-6

3.	Miss. M	65-70	Female	Single, Living alone but got a boyfriend in the top flat	2	Smart-phone & Laptop	Daily	Uses actively for various applications. Competent user. Enjoys using the online world. Makes use of the online world for physical activities.	Not used previously. Learned from library training.	3-6
4.	Mr. B	75-80	Male	Married, Living with wife	2	Desktop & Tablet	Daily	Uses for multiple applications such as Skype, banking, shopping and searching information. Moreover, a passive user of Facebook and enjoys playing games. Competent user.	Not used at work. However, after retirement, worked part-time for an IT firm and learned from there.	3-6
5.	Mr. C	70-75	Male	Married, Living with wife	1	Desktop	Daily	Uses mainly for emails, banking, holiday booking, information search. Limited usage for contacts. Finds it difficult at times. Intermediate user.	Used early forms of computers at work. Self-learning.	3-6

6.	Mr. JH	85-90	Male	Divorced, Living alone but got a girlfriend in the bottom flat	1	Laptop	Daily	Spent more time on Facebook to contact family living abroad. Uses for few limited other applications. Concerns over security. Competent in what he does.	Not used at work. Studied after retirement from library course.	0-3
7.	Mr. M	70-75	Male	Married, Living with wife	3	Kindle, Laptop	Daily	Uses for accessing many applications. Less contact in the online world. Admits helpful but concerned over doing things wrong. Still learning. Intermediate user.	Used computers without internet at work. Attended training at Jobcentre Plus.	3-6
8.	Mrs. B	70-75	Female	Married, Living with husband	4	Kindle, Tablet, Desktop, Smart-phone	Daily	Active user of Facebook. Enjoys using the online world. Uses for contacts as well as different applications. Competent.	Used computers without internet at work. After retirement, self-learning.	3-6

9.	Mrs. CB	80-85	Female	Widowed, Living alone	2	Tablet, Smart-phone	Few times a week	Limited usage. Lack of skill and thinks technology is not for her. Enjoys playing games. Novice user.	Not used before. Learned from daughter and grandson.	0-3
10.	Mrs. F	70-75	Female	Divorced, Living alone in council home	1 (Not working)	Desktop (Not working)	Non-user	No device available for use as computer not working.	Learned to use at work.	0-3
11.	Mrs. J	70-75	Female	Married, Living with husband	2	Desktop, Tablet	Daily	Enjoys Skype chat with family. Facebook user. Uses for other applications. Competent user.	Learned to use at work.	3-6
12.	Mrs. S	65-70	Female	Married, Living with husband	3	Laptop, tablet, iPhone	Daily	Uses for different applications as well as for contacts. Enjoys playing games. Competent user.	Learned basics at work. Attended library training and training from Happy Lappy (training firm).	3-6

13.	Mrs. T	65-70	Female	Married, Living with husband	3	Desktop, tablet, Kindle	Daily	Uses actively for various purposes. Plays games. Enjoys and is grateful to the online world. Competent user.	Learned basics at work and self-learning after retirement.	3-6
14.	Mr. J	65-70	Male	Single, Living alone	2	Laptop, Smartphone	Few times a week	Started using recently. Got skills but no interest. Has security concerns. Novice user.	Learned at university about processors and technical aspects. No practical sides. Recently started self-learning.	0-3
15.	Mrs. P	80-85	Female	Widowed, Living alone	1	Tablet	Daily	Mainly Facebook user. Enjoys playing games. Fewer skills to use more. However, enjoys and tries to learn. Novice user.	Used mainframe computers at work. Went to library training course but found not helpful.	0-3
16.	Mrs. C	85-90	Female	Widowed, Living alone	1	Tablet	Rare user	Owns tablet but does not use it.	Not used at work. No training. Daughter tried to	0-3

									teach but not confident to use.	
17.	Mrs. SG	65-70	Female	Married, Living with husband	5	Desktop, Laptop, Tablet, Kindle and smart phone	Daily	Uses different devices and applications. Uses it for contacts, running a business and other functionalities. Enjoys and spends most of the time in the online world. Competent user.	Learned at work. Self-learning.	0-3
18.	Mr. K	65-70	Male	Single, living alone	2	Laptop and smart-phone	Daily	Mainly spends time in the online world. Uses laptop. For entertainment purposes. Competent user.	Learned basics at work. But mainly studies to use internet from a carer, books and self-exploration.	0-3
19.	Mrs. FH	70-75	Female	Married, Living with husband	2	Laptop and tablet	Daily	Uses for her needs. Mainly social contacts and some applications. Intermediate user.	Learned at work. Self-learning.	3-6

20.	Mr. T	75-80	Male	Married, Living with wife	2	Laptop and tablet	Daily	Passive user. Tries to learn. Thinks it is important nowadays. Novice user.	Learned DOS at work. Self-learning and support from family.	3-6

Table 1. Participant demographics

This chapter presents the findings of the thematic analysis of the data collected from people aged 65+ in the form of face to face, semi-structured interviews. The main aim of collecting and analysing the data was to explore the perceptions of older people about their social participation in the online world. Four themes were identified. Several subthemes emerged under each of these themes.

The four main themes and their subthemes are:

- Online world is an addition to their lifestyle
  - Online world activities ***facilitate*** physical world activities
  - Online world activities ***compensate*** physical world activities
  - Online world activities ***contribute*** to their physical world activities
- Factors affecting the online world social participation
  - Availability of resources
  - Compatibility
  - Portability
  - Skills
  - Perceived need
  - Interest
  - Openness to learning
  - Reluctance to change
  - Support
  - Security
- Connectedness
- Subjective well-being

- Satisfaction
- Happiness
- Frustration/Anxiety
- Perceived worthwhileness

During the face to face interview, a participant's perceptions about their different activities for social participation in the online world were asked. The themes were generated from the perceptions of the 20 participants. To demonstrate the perceptions of the participants, some quotes from the data were presented. Minimal editing was performed. However, repeated words are omitted that did not intend to detract from the emphasis participants provided on the subjects.

4.3 Theme 1: Online world is an addition to the lifestyle

Most participants in this study felt that the online world was helping them in many ways. It was the part of their life now. Online world activities were seen to be an addition to their physical world activities, and the two were linked and not seen as separate entities. The participants used the online world to participate in different activities in the online world as well as in the physical world.

They felt that the online world activities are facilitating their physical world activities in some cases, whereas in other cases, it is compensating or contributing to their physical world activities. Most of the interviewees felt and confirmed that the online world is helping them in many ways and is an addition to their lifestyle. Therefore, this is the key finding of this study that the online world is an addition to their retirement life and has become a part of their life that cannot be separated.

Participants generally viewed the online world as an addition to their lifestyle and it helps in many ways to keep them active. They recognized that the online world has helped them to lead an active life in the online world as well as in the physical world.

> *"I'm too sociable. I like to be with friends and outside… That's just an addition to help me do things and to be entertained by the Solitaire".*

Participants of this study confirmed that they were happy that they could use the opportunities of both the online and physical world to keep their retirement life occupied. Moreover, the online world has made their life much easier. One of the participants quoted that the online world is a bonus to their life.

> "*It's definitely made life easier… It's a bit of a bonus that we've got it and perhaps – having not spoken – if I hadn't spoken to you perhaps I wouldn't appreciate it. We've taken it as a given but actually, we are very fortunate to have it."*

Participants stated the importance of maintaining social contacts with their family and friends scattered all over the world in the modern society. Participants acknowledged the opportunities that the online world provides to maintain their connectivity.

> *"So the internet is actually helping me to keep in touch with my friends. I lived in a lot of different places, and the Internet is really helping me to stay in touch in a daily basis with my friends".*

Moreover, participants imagined that their life would not be the same without the internet.

> "*I think I would be really unhappy without it. I mean it's your own thing to go - and change what you don't like about your life before. But I think that would be the Internet. Without internet, I would really very lonely and very unhappy. And I think life would have been not as good as it is now without Internet".*

Furthermore, participants acknowledged that the online world makes their life easier in many ways; for example, running a charity, different clubs, and even their business. They admitted that the online world is very helpful in many ways and has become an inseparable part of their life nowadays. However, Mrs. B thinks that although she could personally do without the online world, it is necessary in today's world to have some of it as it has become a part of the lifestyle.

"I suppose organising things, looking – like looking for entertainment. I would go online and put in a local band or a restaurant that we want to use or something like that… Then yes, technology is good for that because it saves getting in the car and going round everything that way. But in my own life, I could do without it. But we have to have some of it now, that's the problem."

Another highlighted a use of the online world is that it helps to organise their physical world group activities like a bowling club and walking group activities. The online world provides convenience and practical help to organize these activities. Moreover, the online world is helping them to get more involved in their physical world activities.

"*It's very convenient, yeah, very useful. I wouldn't say they've inhibited other activities, no, no. No, in the main it's useful – it's very useful, it is, definitely."*

When most of the participants acknowledged the importance and support of the online world in their day to day lives and confirmed that it is a part of their lifestyle, one of the participants had a distinct view. He mentioned that he would not like the online world to invade into his life and become a part of his life. However, this participant uses the online world for different activities and was happy with what he does so far with the technology, but he doesn't want it to be a part of his life.

"I'm happy with what I do, yes, at the moment. I've got – it seems as though we've got so much on our plate at the moment, which we do that I haven't got time, or I personally don't feel I have got time to spend more time on the computer. I don't want it to be part of my life."

Therefore, although most participants found that the internet enhanced their lives, or was an addition to it, there was also a sense from some that it could become detrimental if allowed to incorporate into their life, but they would like to use it to some extent. Although, generally, participants perceived that the online world is helping people in different ways. It mostly applies to their individual needs. For some people, the online world helps to keep them active as the age-related morbidities

and personal reasons inhibit them from actively participating in different activities in the physical world. Instead, they make use of the online world opportunities.

For example, some participants found it hard to engage actively in the physical world activities due to their age-related illness. Mr. JH is one such participant, who agreed that his laptop is helping him many ways to maintain his life with limited mobility. He thinks that it is helping him mainly in two ways. It is helping with writing his books using MS Word (as he is an author of fictions) and also with his communication.

> "*Well it does the job, it does two major jobs for me. It does – it's my writing and my communication; that's basically what I use it for. I mean the rest is just games and, you know, indulging, listening to things or not, you know. But basically, it's the writing, very important that is and as I say, communication."*

Moreover, another participant, Mr. K, struggled to get engaged in physical activities following a stroke. However, he thinks his laptop is keeping him active in the online world. It seems to be too close to him.

> *"My laptop - is actually my pet now."*

Furthermore, the participants suggested that the online world is helping them to overcome their loneliness and other limitations.

> *"So this is my companion now. I spent most of my time in front of it. It's something to do but as I say, it just passes my time. Yes, I couldn't think of – I don't know really. What I'd have done without my laptop. I always enjoy my time; I spent with my laptop".*

For people like Mr. K, activities out in the physical world were not possible due to mobility issues, and he does not have many friends around to socialize in the physical world. However, the online world social participation is helping him to enjoy his life and overcome his limitations and keep him socially active.

The key findings of this study point to the fact that the online world is generally helping older people in different ways and is an addition to their lifestyle. However,

exploring further into the ways of how the online world acts as an addition to older people, three sub-themes were generated. They are:

1.1. Online world social participation ***facilitates*** physical world social participation

1.2. Online world social participation ***compensates*** physical world social participation

1.3. Online world social participation ***contributes*** to their physical world social participation

4.3.1 Sub-theme 1.1: Online world social participation facilitates physical world social participation

The findings of this study showed that the older people were using the online world for different activities. The data illustrated that the older people were using different opportunities in the online world and were making use of it in many ways. However, in many cases, the activities in the online world facilitated or aided their physical world activities. The finding showed that the online world social participation helped them in many ways and facilitated their social participation in the physical world.

For example, one of the participants, Miss. M does a lot of refugee volunteering work in Greece. They have an online group, which helped the volunteers to start the volunteering and throughout their volunteering there. She recognised that the online volunteering group was providing support for the people actually to volunteer in Greece in the physical world. Therefore, the online world activity helped her physical world social participation. At the same time, she believed that the online group was like the volunteering group in the physical world. A similar relationship, bonding, help and support were established in the online group.

> *"I also belong to refugee's volunteers' website. They made me one of the admins on there. It is a group of people from all over Europe. The refugee volunteers were put together to help people who want to go for volunteering. But don't know where to start. Because when you start that's the hardest part. And so we are there to offer advice and suggestions and help each other*

that's a really nice group. You get the same feeling as you are in the field doing the volunteering work. You get the same feeling of friendship and help."

Miss. M further acknowledged that although the online group members have not met each other, the people in the group do feel they are close. She suggested that there was no difference in the group according to the platform where they existed, either in the online or physical world. It felt that she received the same support as a physical group from an online group.

"*I have not met all of them. We have a common passion I suppose common purpose so it's really nice*."

Moreover, other participants who were involved in different groups in the online world have similar experiences.

Additionally, participants confirmed many other daily uses of the online world that helped them to facilitate their physical world social participation. For example, Mr. M organises walking for a group of older people in the physical world. He uses the online world to facilitate their walking activity on a weekly basis.

"*I sort of partly run a walking group, I print notices and things like that, and I use Word. I keep in touch with, and obviously the walking group, I use the Internet to communicate with them, tell them where we're going to walk next week."*

Furthermore, Mr. M gathers information from the online world to organise his walking group activity in the physical world.

"I also belong to Walking World, which does walks. So I click onto there and I download walks there and then I do the walks before the main group of us walk on a Tuesday. So I try and do it a few days beforehand. They give you – take the route that you are going to take, they have taken pictures. Then there's an ordinance survey group of the whole package and you just print it off and use it."

Another participant, Mr. J, does not participate in the online world apart from learning about stocks and shares as he recently became interested in them. He uses the online world to gain information so that he can invest in the physical world. Mr. J thinks online world facilitates his physical world activity.

> *"There are sites out there that do help you and teach you how to look for signals and give you an idea of any political situations that could affect say oil for instance. I'll use the Internet to study stocks and shares."*

Furthermore, another participant, Mrs. K, uses her email to book holidays. Email makes it easier for her to book her holidays and she thinks it is quicker. She uses the online world activity to facilitate her physical world activity.

> "*I ring Bournemouth Airport and they send me all the details on my email account. So I can check up and see whether I done the right thing.*"

Another instance of the online world that facilitates the physical world was portrayed by a participant. Mr. T organises his club meeting using email. He thinks it helps him to facilitate his physical world social participation. Mr. T thinks the reminder that comes up with the email is also very helpful.

> "*I always organise club meetings and send invitation to everyone in that club. So that they can accept or decline my meeting request you see. Then I can know who's coming for the meeting as well. This is really good. And you see it pops up as a reminder"*.

This finding of the study informed that online world social participation was helping the physical world social participation. The online world was used to facilitate the physical world activities by communication through email, support groups and coordinating meetings such as walking groups and club gatherings. Therefore, it is understandable that the online world activities facilitate the physical world activities and make their life easier.

4.3.2 Sub-theme 1.2: Online world social participation compensate physical world social participation

Another finding of this study was that the online world provided vast opportunities to participate in different activities, overcoming obstacles like distance and age-related limitations. Though the activities were not the same in the physical world and the online world, some online world activities compensated for the physical world activities to a certain extent.

This was evident in the experience of Mrs. J, who has a son living abroad, and she keeps in contact with him through Skype. Mrs. J reflected that talking through Skype was good as she can see him while they talk and she felt that they were in the same space. Mrs. J enjoyed it and believed that it was much better than a telephone conversation. Skype helped her to overcome the obstacle of distance for seeing and talking with her son.

> *"Oh great, oh I think it's wonderful because we never see him – we haven't seen him for a few years and it's just like being in the room with him and he can wander off and make a cup of tea and bring it back and people can pass by, it's very good, we rely on that really otherwise – phone calls are not the same are they?".*

Mrs. J was also excited about seeing her grandson during their conversation through Skype. She believed that Skype compensated the physical world visit of her son and family as it was not possible always due to the distance.

> "*T*** pops in sometimes but he is 14 and they do quite long hours at school and he's in the basketball team so he's quite busy all the time. But, you know, he pops in now and again in front of the camera. He doesn't say much.*"

Another example of online world participation that compensates the physical world activity was explained by Mrs. CB, who is a lady in her 80s, and she was not very familiar with the technology. She was not comfortable using her iPad and sounded very frustrated as she does not understand it much. However, she liked to use the

opportunity of the online world with the help and support from the family members. Her grandson helped her to get involved in a Scrabble game online.

> "*I play games with other people. He set that up. I don't know how you do it. I had a friend here the other day and she said, well I'll play Scrabble with you if you put me on. So I don't know how he did it. So I've got about four people that I play word games with and you know – miles away. I don't even know who some of them are.*"

Mrs. CB used to play the Scrabble game in the physical world with her friends. However, she lost her friend, and the online world activity is compensating her physical world activity.

> *"I used to love playing Scrabble, but my friends have died so – yeah, we used to have a couple of Scrabble evenings every week but unfortunately...".*

She enjoyed playing it online, although she was not technical with the gadget. She used the online world social participation to compensate for the physical world game that she used to play with her friends before in the physical world.

> *"I do, I love it. I do most of the – well I don't say most – I have a very good run of winning and then suddenly I lose; I play with my son and two friends and another friend, well another lady. So yes, I find that very – well it's good. It keeps your brain going doesn't it?"*

Moreover, another instance of the online world compensating the physical world activity was explained by another participant, Mrs. T, who uses her Kindle to read books now, which is replacing her reading hard copy books in the past. Although she reads the hard copy of books occasionally, she thinks that the Kindle is space saving while she travels around the world. Kindle reading is compensating her book reading when she travels, as she cannot carry many things when she takes a flight. Moreover, Kindle helps space saving in her flat. This showed that for some, technology was compensatory even when their physical world activities were not obviously curtailed.

"*But I love reading, and so yes, I read a lot. I would say I have as much pleasure from both. The joy of the Kindle I can have – like we went to Tenerife to stay with some friends and I read five books. So for that I think the Kindle is wonderful.*"

Furthermore, other participants confirmed that the online world activities compensated for their physical world activities. Mrs. SG was an active online world user and it became a part of her life. She uses Skype, and it is helping her to see her grandchildren and other family members scattered all over the world. Mrs. SG thinks that as she could not see them all the time as they live abroad, Skype is compensating to their physical world visit.

"*Well I suppose it's really a brilliant thing because – if they are too far away you wouldn't be seeing them anyway and the ones – you know, we're pretty good about going to see people anyway but I think it's lovely that you have that communication and like the skype, But you know I think, yes, if we didn't have that I would be really sad because I wouldn't be seeing them. With my friend abroad and my sisters, we use Skype to speak and see and it gives me a real feeling of seeing them. It is not practical anyway to see them every week. So it is great that we got skype and have all our little chit chats through it."*

Another example of the online world compensating the physical world was demonstrated by Mr. K, who was active in the physical world before he had a stroke. Following the stroke, he has moved to a new flat, and his mobility was restricted. However, his laptop compensated his activities, and he loves spending time in the online world.

"*This is my laptop - Which is actually my pet now. I spent most of my time in front of it*".

Moreover, he experienced that the support groups in the online world compensated for the support groups in the physical world that he could not attend. Mr. K was involved in a group where he felt that he was supported as if in a physical world

support group. He supposed that the group is exactly like a physical world group and people were supporting each other as if in the physical world.

> "*Talkstroke - It is basically the group for people suffering from a stroke. I would say experienced stroke. Or – you see looking after people who had a stroke. It is a very supportive and useful group. You can see people in the very similar situation. I struggled a lot initially. But now I am ok. So I always tell them my story when they are in the same situation as - like before. Very useful tips – People would suggest in there. I am an active member there. It is like a real group of people helping and supporting each other.*"

The participants of this study perceived that the online world social participation was helping their physical world social participation. The online world was used to compensate the physical world activities overcoming their limitations. Therefore, the online world is helping older people to compensate for their physical world activities.

4.3.3 Sub-theme 1.3: Online world social participation contributes to the physical world social participation

The data from this study showed that some activities performed by the older people in the online world contributed to their activities in the physical world. These activities add to their physical world activities or will be a supplement to their physical world activity.

This was illustrated by the experiences of many participants. For example, Mrs. E is the secretary of a club that hosts rabbit shows. She used an application downloaded from a vendor to manage the rabbit show. This application made her job much easier while hosting the show. This showed that the online world activity contributed to the physical world show.

> *"It's well designed. It takes away the 75% of the handwriting that you need to do with the old hand. Which helps because of arthritis in the right hand and handwriting is not easy. It sorts out. And this program does all that. It also prints out all the results. It counts and as well print out price cards. All*

automatic it puts the dates on puts the signature on. It makes the job so much easier."

Another participant, Mrs. S, runs a bed and breakfast (B&B) after retirement and moving down to Dorset. She enjoys it and is actively involved in the online world to manage her B&B.

"*I have a computer, what you call desktop which I use for my B&B mainly. I have got accounting software in it. I got a special application for booking and billing which is brilliant and it collates with the accounting software. So I don't need to do much work manually. But I still keep a copy of it all printed and filed. I know it's all backed up.*"

Moreover, Mrs. P has got an iPad and has a Facebook account, which she is not doing much on it. However, she enjoys using it as she gets an update on what's going on with her family and friends' circle. She enjoys posting comments on the pictures uploaded by her grandchildren and other family members. Although she does not do much on Facebook, her commenting and liking the posts of her family posts has contributed to her communication. She thinks she gets updated family information.

"*I look at what the kids are doing and tell them off if they need it and I praise them if they don't because S*****'s youngest daughter has just won Undergraduate of the Year, because her Uncle had put on it that she must get her brains from him and I put on it, don't you believe it, he got his brains from me."*

Furthermore, another participant, Mrs. B, does some online shopping, and she does search items online, which have contributed to her shopping in the physical world. This provides supplementary information for her to choose the shops and she acquires an idea about the shops, helping her to decide where she needs to go to get the shopping.

"I'm more, I look up what things are, I'd go into Marks & Spencer. I go into like Next shop to see what they have and if we go – if we decide we want to buy something I would go into like Next or whatever store – I would go in to

find out where there's – I mean just say you want to buy a chair or something; I'd go and look up chairs and see where they do it."

The participants of this study perceived that the online world social participation is helping their physical world social participation. The online world is used to contribute to the physical world activities and is making it easier for them.

Therefore, the first theme of this study showed that the participants of this study generally perceived the online world as an addition to their lifestyle. Exploring further into the ways of how the online world acts as an addition to the older people, it was perceived that the online world helps in many ways in their physical world activities. Data illustrated that online world social participation facilitates or compensates or contributes to the participants' social participation in the physical world in different ways.

4.4 Theme 2: Factors affecting the online world social participation of the older people

The data collected from 20 participants for this study indicated many factors that affect an individual's usage of the online world. As we know, individuals are different, and therefore different factors have been raised by the participants that affect their social participation in the online world. The factors drew out here are from the data that affects the usage of the online world. This theme added to the perceptions of older people about their online world social participation.

4.4.1 Sub-theme 2.1: Availability of resources

The data from this study showed that availability of resources was an important factor in contributing to the usage of the online world. Among the resources, availability of devices was considered as a primary factor for accessing the internet. Out of twenty participants interviewed, eighteen were using the online world, whereas two were not using the online world. However, out of 20 people, 15 of them were using multiple devices. Generally, an increased number of devices showed the higher participation of the participants in the online world.

One of the participants who was not using the online world due to a fault of her computer revealed that due to her recent personal circumstances, she was not able to access her finances. Therefore, she could not buy a device to access the internet. However, she was planning to buy a tablet in the future as she was fascinated when seeing it from her neighbor.

> "*The girl upstairs, she's got an i-pad and she brings it downstairs sometimes, you know, and we are in there poking our noses and I'm like, oh that looks pretty good, I'm going to get one of these*."

Although this participant was interested in the online world, lack of devices and the internet hindered her usage of the online world.

However, some participants acknowledged the advantages of using different devices and how it helped their accessibility to the online world. This was illustrated by the words of Mrs. S, who uses multiple devices for online world participation. She uses each device for different purposes.

> "*So technical-wise I have a laptop, I have a tablet, and I have an i-phone, yeah. I'm not very good with any of them but I plot along with them so I use them literally for my own use, i.e. supper club, my charity, I do a bit of work with that. I do our entire household banking online; I book all our holidays online and all that sort of thing. The phone I just play with".*

For Mrs. S, the availability of different devices enabled her to participate in different activities in the online world and helped her physical world activities.

Apart from the availability of devices, availability of internet connectivity is also a factor that contributes to the usage of the online world social participation. However, no one highlighted the broadband issue. However, very few participants have raised their concern about the data contract package on the phones, and it seemed to be non-feasible for them, and as a result, they were not using internet on their phones. This was illustrated by Mrs. T, who found that using data on the phone kept her contract amount going up, so she did not use internet on her phone.

> "*I don't use my mobile phone – oh that's the other thing to say, I don't use my mobile phone for anything other than texts and phone calls. I know this is a bit silly but I had trouble with them where they kept upping my contract figure and I said, right, I'm not going to use it for anything else but phones and texts and I know I get my texts free so it's just phones and I don't use it abroad, so my bills are manageable.*"

Moreover, availability of proper training was another important resource required for the older people to use the online world. The participants who were actively engaged in different online world activities and the participants who were not actively participating in the online world insisted on learning more about the online world opportunities if they could find proper training. This was suggested by most of the participants, and for example, Mrs. J uses the online world to the extent she needs to, but she thinks that she would like to explore a bit more of the opportunities of the online world. However, she thinks that she needs more basic training to go any further.

> "*I'd like to have the basics explained to me. That's really what puts me off going further because I don't understand I keep away from it really and that's on Facebook as well. What's status and what's posting and what – and I think, oh I don't understand it so I really don't go – that's why really because I probably could do with a bit of basic education on it.*"

Furthermore, participants suggested that the availability of training materials is also a factor to explore much of the online world, as the participants often mentioned themselves as:

> "*Not brought up with technology*"

Therefore, they need assistance to make use of the opportunities of the online world. This was evident in the words of Mrs. P, who is interested in learning. However, she thinks some classes are expensive if it was one to one, as she prefers that over group training. Therefore, she was looking for materials that explain the steps to use the iPad that she owns.

"*I did think when they bought me the Facebook oh I would get on and learn it but most places want about £40 for a lesson and I think that's a bit – well by my standards it's a bit steep. I have just sent for some paperwork, in a magazine*".

This finding of the study points out the importance of the availability of resources such as devices, internet connection, proper relevant training and simple training materials. The lack of these resources could affect the participation of the older people in the online world and keeps them away from the online world.

4.4.2 Sub-theme 2.2: Compatibility

The data collected from the participants informed that there was a need for updating the technology devices and applications frequently. Otherwise, that prevents the access of the devices or applications and this reduces their interest in the usage of the technology. Not considering too much into the detailed technical aspects of the term, certain issues were raised by the participants due to the quick update of technology that frequently led them not to be in harmony with the technology.

An example was given by Mrs. E, who has been using her desktop for many years, and it crashed recently, leaving most of her applications not working.

"*Unfortunately, in August, September beginning it's gone. It is crashed. And out of Office 2000 only Word has remained. All the rest are gone.*"

Therefore, Mrs. E bought a laptop but she did not like it, and that restricted her being able to get online frequently like she used to.

"*I have got a laptop. I was advised. Don't go in further in the PC get some laptop for more up to date. I hate it*."

Another participant explained her experience about her computer becoming incompatible. Miss. M actively used the online world for different activities. However, she felt frustrated when her old computer goes slow, but she easily switches between her multiple devices.

"*Only when it is slow I get bit stressed. In this particular case down here I don't want to say this too loudly but it is the computer. It is really old. I have another laptop upstairs."*

Apart from the device getting slower or crashing, a few other compatible issues were raised by the participants. Mr. C recalled that it was quite frustrating at times when he used the websites on his computer. He found it difficult with the layout of the websites.

"Some – sometimes it's quite frustrating, some of the sites we try to use and it's mainly because we are probably not familiar with the layout of them and so on."

However, this could be due to the use of older versions of browsers and different versions of the sites, such as desktop version and mobile version. Another issue raised by the participants was about passwords. Mrs. S thinks that the number of passwords that they need to remember was not compatible, especially with older people. They have different criteria, which makes it harder to remember.

"*Yes,– because you've got to have so many passwords these days and I am one of these that does use similar ones quite often but with a slight variation that I'll remember and you're not supposed to write them down anywhere but what on earth are you supposed to do because your brain doesn't work as much when you're older*."

The data from this study points out the importance of compatibility of the devices and its applications. Slow devices, an unfamiliar layout of websites and an unlimited number of passwords to remember makes people frustrated and keeps them away from the online world.

4.4.3 Sub-theme 2.3: Portability

Many of the participants in the study used multiple devices to participate in different activities in the online world. People using multiple devices suggested that tablet was very portable as it was light and easy to carry around.

One of the participants, Mrs. S, uses the internet on her laptop, tablet, and phone. She uses each of these devices for different purposes. She suggested that the tablet was handy for quick usage and convenient to take anywhere. However, she was not confident about the security of the tablet as it tends to remember what she types in. Therefore, Mrs. S uses her laptop for doing online banking due to this security concern.

> "*My tablet I use, again I pick it up at night-time, just go onto Facebook and have a look, see what's been going on, because I learn more about my older son on Facebook than I do seeing him. I occasionally, once in a blue moon I've done a catch up, you know, on the tablet where I've missed something. I feel more comfortable using a tablet now. Not to start with; I wasn't sure.*"

Furthermore, Mrs. S thinks the portability made the tablet so convenient. She can sit with her husband and fiddle with the tablet while he is watching TV. When asking Mrs. S to compare the three devices, she said:

> "*For enjoyment and relaxing I like the tablet now. I've got used to just sitting with that and again if I play that game I play, I play that on my tablet and the phone. I don't play anything on my – because my laptop is in the office as I call it and you're cut off more with that aren't you... And the old man used to say, are you not coming to sit with me? Or something like that – so at least with the tablet you don't have to watch all the programmes, you know, the planes and the boats and the animals and – which is all he watches. I can just sit and just fiddle.*"

Another participant, Mrs. B, perceived the tablet as very user-friendly. As she retired a few years ago and started traveling around the world, she found it very convenient to carry around during her holidays.

> "*User-friendly…, I find the I-pad is very.., I do like it. And also with the I-pad, you know, you can take it away with you whereas even a laptop, it's not something you are going to cart around with you are you*?"

Another participant, Mrs. K, was very happy to use her iPad, which she bought recently. She was amused by its multiple uses as she thinks it can be a Bible, it can be a songbook or a magazine. She explained how her tablet was serving her with multiple functionalities.

> *"I'll put on there, it should be what we call a daily text the date comes up and there is a quotation from the Bible. and then there is a read up and then if you want to uh get some extra information we just highlight this part and I think it is marvelous you just press that and it pops up and it is amazing. Also with i-Pad I can get the scriptures read to me and I can follow I can listen and I can read it and you retain things that way so that is another good use for it. I-Pad is equivalent to all the information you want it could be a Bible, the songbook, the instruction books that we are using, the Watch Tower, a book be my follower a beautiful book that's all contained in it I only need to take this one with me I don't need to take a big bag with all the books".*

The portability of Kindle was also mentioned by the participants who used it to read books. Mrs. T uses her Kindle to read books, which is replacing her reading hard copy books in the past. Although she reads the hard copy of books occasionally, she thinks the Kindle is space saving while she travels around the world. The Kindle helped her to hold onto her book-reading hobby when she travels as she cannot carry many things when she takes a flight. Moreover, her Kindle helps space saving in her flat.

> *"But I love reading and so yes, I read a lot. I would say I have as much pleasure from both. The joy of the Kindle I can have – like we went to Tenerife to stay with some friends and I read five books. So for that, I think the Kindle is wonderful."*

However, there was a negative view about reading with the Kindle. Another participant, Mrs. C, mentioned about people using a Kindle to read books, and she thinks that it is not for her. She likes to read books in the normal way she has been accustomed to for years.

"I like reading you see but people say, oh why don't you have a Kindle? Why read on a computer if you can read a book? You know, it's stupid, isn't it? I don't want to take an electric thing to bed with me and read, it would probably be going all night if I fell asleep. No, I like reading books and I like looking in books for, you know, if I'm looking anything up I like to look in book".

However, it is to be noted that she does not have a Kindle or has owned one but expressed her perception about the Kindle without trying it.

The data demonstrated portability of the tablet, where participants find it easy to use and do multiple tasks on it. Moreover, it can be used for convenience and is lightweight to carry around. The Kindle device was also reported to be an easy and convenient reading gadget.

4.4.4 Sub-theme 2.4: Skills

The data collected from the participants showed 'skills' as an important factor affecting the online world social participation. Skills are essential for using the technology to a certain level. A lack of skills make people move away from technology rather than embracing it. This was explained by a participant, Mrs. CB, who recently got a tablet, which she hesitates to use. She thinks that she does not have enough skill to use it. Mrs. CB just gave up using her tablet as she found it hard to learn.

"My son brought me this tablet. To be honest I don't have a clue what to do with it. I never used computers or any sort of thing. I have never used one such sort of thing before and I am so scared of pressing something and getting it wrong".

Another participant, Mrs. E, thinks that we need some skills to use the computers as they do not teach everything at the training center. She thinks that as we are all not gifted with certain skills, it is hard for people, especially older people, to use computers to a competent level.

"All the little things that you have to pick up for yourself. Nobody tells you how to do it with or start with. They don't tell you how to download how to upload all these all facts you have to think of yourself. We are not all gifted with certain skills or even a crystal ball".

A similar view was demonstrated by Mr. K, who thinks that people need some skills to use a laptop. He thinks no one can teach every aspect of a laptop. They have to keep on trying to get things right.

"I think. It's a lot to the user. People can't teach you every bit you see. We need to try it out ourselves. It needs a lot of interest to crack on things. And obviously time. I don't have anything to do. So basically I spent my time with my laptop."

Furthermore, another participant explained that trial and error approach helps him to use the computers. Mr. M says that it is sometimes hard to learn the computer as it changes frequently. He thinks the information provided for carrying out a task is not enough as the terminology confuses him. However, he thinks there is a trial and error approach to be applied to get around something on computers.

"*I haven't been brought up on a computer terminology, it's all very, very confusing I find, very, very confusing sometimes. But once something is explained to me in layman's English I understand what they're on about. And you do feel – you do find – I suppose a lot of it is trial and error basically, you can always undo it*."

This subtheme of the study points to the perception of the participants and the importance of skills that older people need to have to learn and use the online world to participate in different social activities. Data showed that a lack of those skills may keep older people away from the online world.

4.4.5 Sub-theme 2.5: Perceived Need

The findings of this study pointed out that the perceived need is an important factor that makes people become engaged in the online world.

A perceived need to use certain applications helped the participants to sustain their usage in the online world. This was explained by Mrs. E, who learned computer a few years back, and she got the skills to use Microsoft Office proficiently. However, she is not actively involved in the online world for social participation. She uses Excel spreadsheets and customized software to run the rabbit shows efficiently. She uses the online world as it was needed to run her show efficiently and easily by overcoming her physical limitations. She learned computers to a maximum level that she could achieve, but she does not feel she needs to use the other things apart from the spreadsheets and the software to run her rabbit show.

> *"I managed to sort myself out with spreadsheet. I am secretary of a club.., which holds shows three-four times a year.., and I have to take the entries and sort them into the correct order and I found the spreadsheet very useful for doing that."*

Another participant, Mr. B, uses his computer for certain activities, and he thinks the usage depends on the need for the activity to be performed. He uses Skype to talk to his son who lives abroad. He does not see him often, so he prefers to use Skype to see and talk to him. However, basically, he prefers to speak to people face to face or over the phone. When asking Mr. B about it, he said he uses it when he needs it.

> *"Well, I've no need to have I? Computer is a tool as far as I'm concerned and I use it when I need it and that's it."*

Furthermore, Mr. B is a passive user of Facebook. He does not do much on it as he thinks he does not think there is a need for it.

> "*I have made them friends on Facebook but I never post anything on Facebook. Well, there's no need to be – I don't feel there's a need to be.*"

Another participant, Mrs. T, was involved in a discussion board online, which was related to her granddaughter's condition. She found it very supportive and informative. The need was the major factor that made Mrs. T get involved in an online group.

"*I did for a short while for my granddaughter who got involved with a group and that was really helpful, it was helpful because people, you know, talked about what their problems were and it was very confidential – well you felt it was very confidential. So I did for a short while.*"

This subtheme showed that perceived need is an important factor that contributes to the usage of the online world. When people feel that they need an online world activity for a different purpose, they try to get on with that activity. Different activities they engage in in the online world depends basically on their need. For example, mostly participants with family and friends abroad use Skype to contact them, whereas participants with family living locally often use the phone and face to face communication methods. Therefore, perceived need is an important factor affecting the online world social participation.

4.4.6 Sub-theme 2.6: Interest

The findings of this study point out that interest is a basic factor to use the online world. Mr. K uses his laptop effectively throughout the day for different activities in the online world. He recently started using it, but he thinks he got interested in the online world and tried to explore the opportunities, which is a great help for him as he cannot do many activities in the physical world due to the morbidities following the stroke.

"*It is basically Kasia who taught me to use. She showed me to use Facebook first. Then I got interested. I brought a book about internet basics which helped me a bit. I learned to do online shopping, online banking and so on. Then you see, I got interested in using my laptop and started exploring myself.*"

Another participant, Mrs. CB, got a tablet recently as a birthday present. She does not like to touch it on her own. She thinks she is too old to learn to use her iPad and lost her interest in it.

"*You know I am too old for all these sort of things. I am not interested and I said to her, No I don't want to learn any further*."

Another participant explained that interest is the basis of using the online world. Mr. M thinks that people use the online world on the basis of the interest. The activities depend on the interest of the individual.

> "*So I use Google – I use it for recipes, I like cooking so I download a lot of recipes. Yes, a lot of recipes I download on there. I just use it for general – I don't – it's purely interest I suppose rather than the business aspect really."*

He further illustrated the reason for not using Facebook. Mr. M is not interested in Facebook, and therefore he keeps away from it. He is not using it as he is not interested in it.

> "*I've got no interest in Facebook whatsoever. I haven't got any interest in that type of – I mean T**** (his wife) finds out all what the nitty gritty and all that the little bits and I've got no interest in Twitter or anything like that.*"

This subtheme showed that interest is an important factor that contributes to the online world social participation. When participants got interested in many areas of the online world, then they tried to learn it and get involved in that activity.

4.4.7 Sub-theme 2.7: Openness to learning

The data showed that openness to learning is an important factor to use the computers at its best. As the technology evolves at a greater pace, people have to learn new things on a daily basis to keep themselves updated with the technology. If people are willing to learn new things, it will help more people to get into the online world.

Mrs. J thinks she is open to learning and that is important to use the technology.

> "*All my friends are quite adventurous, we're open to learning".*

Openness to learning helped another participant to learn the computers and use it to the fullest. Mr. K started using his laptop after retirement. He learned it from his carer, attending a few training sessions and by self-exploration. It was his openness to learning that helped him to use his laptop to a very competent level. His openness to learning gave him the confidence to handle his laptop and overcome any issues.

"I'm quite happy. I can – I mean if I can – I can do various things. so I, you know, I'll get round it anyhow on the computer. I will jiggle around. Mainly trial and error method I'd use to see I can find a way round."

Another participant, Mrs. S, started a business after retirement, and she maintains a Facebook page for her business. She was not confident of using her Facebook page initially. However, she learned how from her daughter, and she maintains it well by herself.

"Initially my daughter helped me to set it up and showed me how to update the page and how to advertise and so on. I was bit scared at the beginning but now I am confident. I manage it all by myself now."

Participants also demonstrated that they are trying to make use of the available opportunities to learn more about using computers. Mrs. P has limited access to her iPad because she does not know well enough how to use it. She just uses Facebook, which was set up by her daughter, so that she can see what her family are doing. However, she is open to learning and finding ways to get information or training to improve her skills in using her iPad.

"*I did think when they bought me the Facebook oh I would get on and learn it".*

However, she found that it was difficult to learn on her own and thought of going for some training.

"but most places want about £40 for a lesson and I think that's a bit – well by my standards it's a bit steep."

As she realized attending face to face training is a bit expensive, she found some magazines that provide online tutorials.

"I have just sent for some paperwork, in a magazine I have there was paperwork in there about a book that's supposed to be very simple to understand because at my age I need simple and so I did ring up and they are

going to send me the paperwork on it and explain it to me. So it's supposed to be very, very basic".

Another participant, Mrs. C, uses her iPad for limited purposes like Mrs. P., But Mrs. C does not want to learn further. She thinks it is not for older people. Mrs. C refused to learn further if she gets an opportunity.

"I'm not interested really. What would I learn on a computer, tell me?"

However, Mrs. C enjoys playing the Scrabble game online as she used to play it with her friends in the physical world. She enjoys playing it online, although she is not technical with the gadget, and she uses the online world social participation to keep her engaged and she learned to play it in the online world.

"I do, I love it. I do most of the – well I don't say most – I have a very good run of winning and then suddenly I lose; I play with my son and two friends and another friend, well another lady. So yes, I find that very – well it's good. It keeps your brain going doesn't it?"

This subtheme showed that openness to learning is an important factor that affects the online world social participation. When people are open to learning, they will try to learn more about using computers and get involved in the online world activity.

4.4.8 Sub-theme 2.8: Reluctance to change

The data from this study showed that some participants are accustomed to doing things in certain ways for a long period and some are reluctant to change the way they do things. This reluctance to change is another important factor affecting the online world participation of the older people.

This was reflected in the case of Mrs. E. She learned how to use a computer a few years back, and since then, she has been using her desktop. Recently, her desktop was not working properly and therefore, she was advised to get a laptop. However, she does not like her laptop and is not using it, instead, still using her desktop with limited available facilities. Mrs. E said she was so accustomed to her desktop for many years and she does not like to change her way of accessing the online world.

"I have got a laptop. I was advised. Don't go in further in the PC get some laptop for more up to date. Hate it. I hate it. Yes, that was like a piece of office machine [Pointing to the desktop computer]. And it was something I was accustomed to."

Another participant also explained the difficulty in accepting change. Mr. B learned to use the computer after retirement, and he started using a desktop computer. He does not like laptops now as he thinks it is not for him. He is accustomed to using his desktop and wouldn't like to change the way he is accessing the online world.

"*Well it was after I'd retired from the railway., I mean that's why we used it more and that's why I won't have a laptop you see. I don't like laptops. Because I think you have more control with a desktop than a laptop and you're fiddling about and you don't have a mouse, you are fiddling about with your fingers and it's not for me. I'm sorry*."

However, Mr. B would like to use his tablet occasionally, mainly because of its portability.

"*I use the tablet; I kind of use it for e-mails. I don't use it a lot but sometimes playing a game, especially when you are traveling and things like that you know what I mean*".

Mrs. C uses her tablet occasionally. She likes to talk to people rather than do things online. She thinks it is all modern stuff and doesn't like to change the way she has followed throughout her life.

"*I know several elderly people that have been and they don't understand it, they don't keep it up. They – you know, I mean I've got a brother-in-law and when he phones up and says, you can apply online and he tells them the only line he's got is a washing line., Well you see they don't understand, we're in our 80s. We don't want all this modern stuff. We want to be able to talk to people and explain.*"

She mentioned about people using the Kindle to read books, and she thinks that is not for her. She likes to read books in the normal way she was accustomed to reading.

> "*I like reading you see but people say, oh why don't you have a Kindle? Why read on a computer if you can read a book? You know, it's stupid, isn't it? I don't want to take an electric thing to bed with me and read, it would probably be going all night if I fell asleep. No, I like reading books and I like looking in books for, you know, if I'm looking anything up I like to look in books. I don't want it just shoved in front of me, everything done straight away. I don't think it soaks in. I think if children had to read a book to find out things it would go in much nicer and better than just having it flashed in front of them on a computer*."

This subtheme showed that reluctance to change is an important factor that affects the online world social participation. When participants are reluctant to change the way they used to do things, it will keep them away from the online world.

4.4.9 Sub-theme 2.9: Security

The data demonstrated that there was a mixed view from the participants regarding security concerns. The data showed that some participants do not have a fear of the security issues as they think the technology has evolved in recent years. However, for others, the bad experiences for themselves and their friends or family have triggered security issues.

Participants that experienced negative issues previously were concerned about their security in the online world. Miss M uses different online world opportunities to a competent level, but she does not use online banking. She thinks it is easy for hackers to access her bank account if it goes online.

> *"I don't use online banking, my email got hacked really badly about 2 years ago and I couldn't get my email and if I was doing online banking then they might have cleaned out everything so no I just don't want to do I have the time so I can go to the bank."*

Another participant raised a similar security concern regarding online banking. Mr. J uses his laptop to communicate with people and for his other purposes in life. He doesn't prefer to do online shopping or banking online due to the security fear.

> *"As far as money goes nothing at all, no one gets hold of my bank account in any way whatsoever. I don't trust it in other words."*

However, there were participants who were using online world banking and shopping and security issues do not seem to bother them too much. Mr. M thinks security is an ongoing debate but it depends on the information that is given. He thinks security issues are biased in some way. He was confident that he could take it from there when it was going to happen.

> *"I think online it's mainly financial that worries me. If someone has got my information well, you know, how many there's 60-odd million people in this country, well why pick on me if they want to know my – my background? If it's going to happen it's going to happen. Security coming into this country, it depends on which newspaper you read how you feel and what – and how you think about it. But security – financial security on the Internet, well yeah, it's an on-going thing. You've got a credit card and they keep on bringing out new credit cards with different systems on it that's foolproof and then a couple of months later someone hacks in and they are having to renew it all the time – you know, so I don't know. If it's going to happen it's going to happen".*

Mrs. E does not know how it happened but she was automatically subscribed to a gaming company, and they took her money as a direct debit. She was still paying them and unaware that she could stop the direct debit from the bank.

> *"Solitaire game company: they seem to have an account of direct debit that keeps on coming up. It is only £5 something. And it is not in every month but out of the blue it keeps appearing. We being on the phone with the company. We trying to get it sorted out. But it keeps coming up."*

This subtheme showed that the security issue is a concern for some participants. It may happen due to many factors such as unawareness, lack of skill or reluctance to

change the way they were following for years. The data also showed that some people do not have a fear of the security issues and they were confident to take it as it comes, whereas some struggle with this issue. However, it did not take them completely out of the online world but only restricted certain activities for them.

Moreover, this subtheme showed that unawareness of the real fact sometimes results in prejudice. It has affected older people and kept them from using the online world activities. However, the online world has evolved so quickly in the few past years, ironing out all the drawbacks, but many were unaware of it.

Mrs. C does not like to use Facebook as she thinks she will be recognised all over the world. She was not well aware how it worked and about the security settings.

> *"I don't want to go on Facebook or Twitter. I don't want to be recognised anywhere, do you know what I mean? I don't want to put my name on anything. He's [grandson] got Skype; I said, don't you put me on that. I don't want to be seen worldwide."*

A similar experience was shared by another participant. Mrs. K does not like to use social networking sites like Facebook as she thinks it is intrusive to her privacy and she was quite not aware of the security settings.

> *"No not Facebook account. I don't think they are very good. I think it is bit intrusive and I don't want to know strange people I only want to know who I know."*

This subtheme showed that unawareness is leading people to be prejudiced about certain online world activities and is an important factor that affects the online usage of older people. When people are unaware of the complete facts of the technology due to its rapid progression in the last few years, this has kept them away from the activities of the online world. However, the unawareness about the security issues was the underlying cause for restraining some of them from the online world activities.

4.4.10 Sub-theme 2.10: Support

The data showed that support from family and friends were important to make use of the online world opportunities. However, the older people think that they are not best served and they lack the support they needed to use the online world.

Lack of support was highlighted by Mrs. P, who was not very competent in using her tablet. Her daughter bought her the tablet and set up a Facebook account for her. She uses that account and sees how her family and friends are getting on. However, when Mrs. P got stuck with many things with her tablet, she does not think she gets enough support as people try to teach her and she forgets how to use it after few weeks or months.

> "*She[daughter] does but she's usually got such a lot to do herself, you know, they do – they all come in from time to time and I ask, I say, oh will you have a look at my Facebook because I can't get into it. Oh Nan, we've shown you how to do this".*

Another participant, Mrs. CB, was gifted a tablet by her son on her last birthday. However, she does not know how to use it. She does not use it unless someone is with her. She attempted to learn but does not feel she gets enough support to learn it and therefore she gave up.

> "*I have never used one such sort of thing before and I am so scared of pressing something and getting it wrong you see. You know. And my daughter tried to teach me but she doesn't have that patience. So I thought I don't want to bother too much about it.*"

Another experience was shared by Mrs. T, who mentioned a lady she met at the bus stop who told her about the struggle of using computer devices and the lack of support for the older people.

> *"My family don't live on my doorstep; my neighbors' are older than I am and don't use anything,* I do want to use it and I know what I want to use it for but I need some advice."

Mrs. T suggested that a helpdesk to support older people would be a good idea.

> *"A real sort of pop up help desk for people that have got – our new to computers and to help them."*

Moreover, Mr. M thinks that when some unusual things come up all of a sudden, it is hard to seek advice. He thinks there is nowhere that he can get support. He finds it hard to get much information and feels it is hard to sort it out on the phone.

> "*It's quite a few things blip up and then you think shall I press it yes or no? And you've either got to pay for this advice or alternatively you ask someone within the family that normally knows but it's getting round to them and obviously you don't want to ask them too many times otherwise you overstay your welcome with it. They won't come to your house or -. And it's very hard to try and sort these problems out over the phone because you know, people just assume you know this button, you know that button. Well no, I don't know, at my age – I wasn't brought up on computers*".

This subtheme showed that the lack of support from family affects the online usage of the older people. It was reflected that sometimes, people do not show enough support and patience to teach the older generation by understanding their limitations in using the online world.

4.5 Theme 3: Connectedness

The findings from the data collected demonstrated that the online world plays an important role in the older people's lives by improving their social connectedness. Although out of twenty participants, eighteen were using the online world, only sixteen participants used at least one method of the online world opportunity to keep in touch with other people. However, telephone/mobile phone was the most popular method of contact for them. Email, Facebook, FaceTime, Skype, WhatsApp and some online groups play an important role in maintaining connectedness among the participants. Four participants used only phone for their social contact. However, all participants used mobile phone/telephone for speaking to their close family members.

Close social contacts were maintained over the phone/face to face but participants used the online world to establish their contacts with friends and family living abroad. Mrs. K, who recently bought a tablet, used this to communicate with other people through email. All her social contacts within the close family are through phone and face to face meetings. However, she uses her email to keep in touch with her friends abroad and for official purposes. When asked about the way of contact with immediate family members, Mrs. K said phone for immediate family members. Mrs. K said that her connectivity was improved with the usage of the online world opportunities.

> "*Usually telephone... I contact the landlady and landlord of this property by email. They are in Canada. We are friends anyway. And I also have a friend in Malta., where I used to live for a little while and she sends me beautiful pictures and keeps me informed of the congregation out there so I know what is going on. At the moment that is the only two that I keep in contact by email. And then people like yourself or when I book a holiday.*"

However, another lady, Miss. M, maintains most of her social contacts through the online world. Miss. M lived in different parts of the world before she returned to the UK to look after her parents. Now, she does not have any close family members. However, she has got a large circle of friends. She uses the opportunities provided by the online world to keep in touch with her friends around the world.

> "*So the internet is actually helping me to keep in touch with my friends. I lived in a lot of different places and the internet is really helping me to stay in touch in a daily basis with my friends; Most of them live far quite far away. Some of them live in North America. And now all over Europe. And some of them locally but most of them far away; I use Facebook messaging and WhatsApp*".

Another participant, Mr. J, is a writer, and therefore does not like to get distracted by his phone all the time. So he keeps his phone switched off unless he is expecting a call. However, he always feels connected as he keeps his Facebook page on so that his children who live in different parts of the world can keep in touch with him. He thinks it is quite nice to contact his children and other family members through

Facebook as they all live in different time zones doing different things. However, they can always leave messages for each other so that when they get on Facebook, they can see the messages and respond to them in their own time. Mr. J mainly relies on the online world for his social connectivity.

> "*Mostly they contact me on Facebook. Well, I say that because it's open you see. I mean I have a phone but I don't like – I don't like phoning and I don't like – because it interrupts you know, so I don't have it switched on. Well I do sometimes if I know I'm going to get a call but otherwise, I don't really bother. It's Facebook mostly and, you know, most of them –live in different parts of the world. I'm fairly well connected. I always say use Facebook because I'm more likely to see it there, you see. You know, because I'm doing – you can be doing something else. I can be writing and then a little Facebook thing pops up if I'm on Facebook and so I know then and it's easy to check so I can always stop and think, right, let's see if there's anyone on Facebook leaves a message and I can – it's easy. It's very quick. It seems to work very well and that's what I tell everybody now."*

Furthermore, another participant, Mrs. B, likes to use email and Facebook to keep in touch with her friends and family. She thinks it is quite nice to send photographs and keep informed about different things.

> "*I like using the I-pad because you know you go, like Facebook, e-mails, you know, private messages to different people; On my I-pad I do catch up and I use my I-pad a lot; Facebook, just keep in contact with friends and family; pass photos through to family and friends, yeah and things that are going on, important things that might be happening. And then obviously things that I don't want other people to know I do it like privately to that person*".

However, Mrs. B raised a concern about people not using the phone to keep in touch with family. Moreover, Mrs. B thinks there are some advantages and disadvantages of using the online opportunities for social contact. However, she thinks the advantages outweigh the disadvantages.

"*The only thing is it does – you are inclined then not to use the telephone so much, so you are not speaking to people so much, which I, it does worry me for the future– the So I think it's probably – but then there's people you probably wouldn't phone that you keep in touch. so it does have – it does have a big benefit and also you know what, you know the nieces and nephews, different children, what they are all getting up to and you know, what they want you to know, of course. At least you're, you are involved in their lives, which you wouldn't be because if you phoned them they wouldn't answer it anyway. But they, you know they keep you in touch with that and obviously, you can see the grandchildren, the great-grandchildren, and their children, which I think is really, really good*."

Mrs. T is an active lady who keeps a close relationship with her family and friends. She uses the online world and physical world for social connections.

"*By e-mail – Face Time – Facebook and telephone, we still do use the telephone. Also, I do try and send letters and cards to the children, to the grandchildren because I think they still like the postman to come and, you know, put something through the letterbox*."

Moreover, Mrs. T makes use of the group chatting facility, which she found was very convenient.

"*There's five of us and we're a group and we will communicate, Well it's only a group of friends but we do things together; we will go to National Trust or something like that – so we just ping on our group and they come up*".

However, Mrs. T thinks that the online world has helped in many ways to keep in touch with people, but raised a concern about the negative side of it.

"*Especially I think about relationships because it's very easy isn't it to send a quick text or e-mail and – rather than be on the phone for – or actually the bother of going to see people, I think it has made us lazier; Well I suppose it's a two-way thing really because you – if they are too far away you wouldn't be seeing them anyway and the ones – you know, we're pretty good about*

going to see people anyway but I think it's lovely that you have that communication and like the Face Time, so see my grandchildren and them all fighting."

Another participant, Mrs. J, was so amazed at the Skype facility because her son lives abroad and she thinks to see him through Skype feels like chatting with him in the same room. She thinks it is much better than the contacts through the phone. Mrs. J said she feels more connected by using Skype.

"*We do Skype them quite a lot. We see them on Skype; oh I think it's wonderful because we never see him – we haven't seen him for a few years and it's just like being in the room with him and he can wander off and make a cup of tea and bring it back and people can pass by, it's very good, yeah, we rely on that really otherwise – phone calls are not the same are they?*"

Moreover, Mrs. J uses Facebook, but she is a passive user. She does not post anything but can see the updates from her children, grandchildren, and friends. However, she thinks although she is not an active user of Facebook, it keeps her informed of what other family members and friends are doing.

"*Well we look at people's Facebook but we don't do Facebook ourselves. Tristan has Facebook and yeah, the grandchildren sometimes post things. I really don't know anything about – I've been quite reluctant with Facebook really*."

Other modes of contact for Mrs. J include phone and email. She makes use of all opportunities to keep in touch with others, and she thinks the mode she uses to contact other people depend on the person.

"*Where we used to live I've one friend that we e-mail long e-mails, probably about once a fortnight and the others, just brief ones and then we'll meet up somewhere. So we don't really – I don't send long e-mails to anyone else, just one friend. Often by phone, some by phone, because some people that can't type are not really keen on e-mails, they'd rather talk. So it just depends who it is really."*

Another participant, Mrs. S, who runs a charity, uses all forms of social contacts in her personal and official life. She uses both emails and letters to organise her charity-related work.

> *"Again a bit of both, by e-mails or by letter or with all our members we will write a letter and it will be posted to them because a lot of them are older and they don't have or will use the Internet. They are afraid of it a lot of them – although you can privately send them an e-mail, they don't understand that that is safe."*

For personal use, Mrs. S uses emails, phone, Facebook, Skype and FaceTime. Moreover, Mrs. S thinks she is connected well with the help of the online world opportunities.

> "*E-mails to friends – I've just, I've been on Facebook now I suppose for about a year; again it's just friends and the supper club."*

Moreover, she uses FaceTime and Skype to chat with friends residing abroad.

> *"Occasionally, it's hilarious; especially when you catch them when they've just come out the bathroom or something. And it's cheaper to talk – I have friends in New Zealand that I can FaceTime occasionally; I mean I've got a stepsister and we talk on Skype."*

Although the participants use different online world opportunities to keep in contact with their family and friends, few participants use the phone to keep in touch with their family and friends. However, the factors that keep them away from the online world social contact opportunities differ for each of them.

Mrs. E was a proficient user of computers and was well trained back in 2000. The changes in the technology since then have affected her online world usage. However, Mrs. E uses the phone to keep in touch with her family members and friends.

> *"It's just automatic to pick up the telephone. I know I could do email; Somehow it's not same; One thing I could do letters I always do on the*

computer. And again I don't email them; I type them, and print them; I do them in a word; And it will do like a normal letter; It is strange; Something I do and something I don't".

Moreover, Mrs. E thinks that social connectedness can be well achieved only through face to face contact and she prefers it.

"I prefer face to face."

Another participant, Mrs. F, used computers at work before her retirement and she was quite competent. However, she does not use the computer anymore as her computer was not working and she does not have control over her finances at the moment. However, she was planning to buy a tablet in the future. It was the lack of devices and internet that made her to contact others using phone or text.

"Again phone or text, which is – I've got."

Another participant, Mrs. P, prefers to use the telephone to make calls. She has a tablet but is not very keen on using it. Mrs. P uses her phone to keep in touch with her family and friends. She does not use emails or other online world opportunities for social contact.

"*I can type things in and find things out that I want to know, I can do that all right. It's using firms that I want to find things out from and sending e-mails. I don't do that.*"

Another participant, Mrs. CB, recently got a tablet. However, she does not use it on her own. She just uses her phone to keep in touch with family and friends. She is close to her son and daughter.

"*I always phone them. My son calls me every morning and my daughter calls me every evening. I got one sister who lives in Reading and we talk almost every day over the phone. I occasionally get calls from my grandchildren. And my sister in law calls me every weekend. We have been friends since we were 8 years and later I married her brother and we are still good friends*."

The theme from this study showed that most participants use one or more of the online world opportunities to maintain their social contact. They felt that they were well connected using the online world activity to maintain social contact. At the same time, few participants used only face to face and telephone communication, and they too feel they were connected. However, the participants using the online world used face to face and telephone to keep in contact with their friends and family, they think the online world is an addition to their social contacts in the physical world, providing the opportunities of seeing and keeping in touch with people who are far away or whom you would not contact much. For the participants, social connectedness was improved and online world social contact was an addition to their social contact, and they find the opportunities they enjoy now, they would not have without the online world.

4.6 Theme 4: Subjective Well-being

In this study, the participants have shared their perceptions about participating in the different online world activities for social participation including social contact, contributing resources to society, and receiving resources from society. The effects of online participation on their well-being were grouped into four sub-themes. They were satisfaction, happiness, anxiety/frustration, and Perceived worthwhileness. According to the conceptual framework developed by Tinkler and Hicks (2011) for measuring the subjective well-being for the Office for National Statistics includes mainly three overall monitoring factors. They are life satisfaction, happiness/anxiety, and Perceived worthwhileness. Therefore, these four sub-themes contribute to a person's subjective well-being.

4.6.1 Sub-theme 4.1: Satisfaction

The findings of this study showed that the participants experienced satisfaction with their online world social participation. Miss. M has lived in different parts of the world, and therefore her friends are scattered all over the world. She uses the online world to keep in touch with her friends. She was satisfied with her usage in the online world. She thinks the online world has helped her to keep in touch with her friends.

"The Internet is actually helping me to keep in touch with my friends. I lived in a lot of different places and the Internet is really helping me to stay in touch on a daily basis with my friends".

Furthermore, the online world has helped Miss. M in many physical world activities like refugee volunteering and shopping. She thinks that it gives her the same feeling as when she was doing volunteering in the physical world. She feels satisfied with the support of the online volunteering group, which is helping people working in the fields. She feels that the online world is a very valuable thing in her life.

"*…You get the same feeling as you are on the field doing the volunteering work. You get the same feeling of friendship. Really nice very valuable in my life. We have a common passion, I suppose common Purpose so yeah it's really nice".*

Another participant, Mr. J, is a writer in his 80s. He uses his laptop for a range of things he likes to do. He was satisfied with his usage as he thinks it is helping him to do two main things. Mr. J thinks the online world is very useful for him and feel satisfied that it does that for him.

"*It does two major jobs for me. It does – it's my writing and my communication; that's basically what I use it for. I mean the rest is just games and, you know, indulging, listening to things or not, you know. But basically, it's the writing, very important that is and as I say, communication. You know, and so I can just answer that, that's [*pointing at the laptop*] lovely that is."*

Mrs. K recently started using her tablet, and she is delighted with it and wants to learn more. She thinks it was very nice to be in the online world.

"I feel delighted sometimes I mean I can go on there and Google things and see the road that I lived in Malta... and that is wonderful and I can also go and see where my son lives in Ireland. I can find him not him actually but the area"

This subtheme showed that participants felt that they were satisfied with the online world as it helps them in many ways. Whatever the reason for their usage like communication, volunteering or writing and printing things, or browsing the internet, people are satisfied. The online world fulfills their expectations.

4.6.2 Sub-theme 4.2: Frustration/Anxiety

The data showed that the participants experienced some frustration and anxiety during their online world social participation. However, in most cases, that did not keep them away from using the online world.

This was reflected in the words of Mr. C, who is a gentleman in his 70s, and he uses a computer to coordinate his physical world activities. He is quite competent to use the online world. However, he thinks he gets frustrated and anxious sometimes while he is engaged in the online world activity. However, that does not keep him away from using the online world.

> "*Some – sometimes it's quite frustrating, some of the sites we try to use and it's mainly because we are probably not familiar with the layout of them and so on, but otherwise it's okay*."

Mr. C also thinks it is stressful sometimes while using his laptop because he cannot achieve what he wants to do with his laptop.

> "*Well, it is because you just don't know what to do and you're sort of trying – if you try to do things it doesn't seem to get anywhere so it's a bit stressful for me*".

However, this does not keep him away from online world activities. Although Mr. C experiences a negative effect, the positive effect outweighs the negative effect.

Another participant, Mrs. K, was anxious at the beginning when she started using her tablet. She was unsure what to press and was scared that she would lose information. However, that did not stop her from learning further to a comfortable stage.

"When first of all, I started thinking that if I press something wrong I might lose what I was looking for and I found now you can do that because you can get back to it somehow or other and that was it and when I got over that little bit I think I'm fine I'm no longer afraid of pressing something".

Mrs. J feels anxious when she wants to do new things in the online world, and when it seems it was not working. However, she thinks she will get over it in the end. Although anxiety occurs during her online world social participation, it does not stop her activities in the online world. Mrs. J actively participates in the online world and acknowledges its benefits.

"I did feel anxiety because, just certain things with banking, you know when something is new, you have to put a new payee on, I never seem to get it right, you know. So just things like that but we cracked it in the end".

Another lady, Mrs. C, is a lady in her 80s, and she uses the opportunities of the online world rarely. She owns a tablet and a smartphone. However, she is not comfortable in using it.

"*Well I don't feel very comfortable about using it and it really annoys me when I phone up to find something out and it's a recorded message and you cannot speak to anybody and I can't do it on www. Everybody tells you to go there. I don't understand that. So I don't use it very much*."

Mrs. C tried to make use of the online world for different activities. However, most of the time, it did not work for her, and she gets annoyed by that fact. She explained her experience once when she was entering a password and it seemed to not be working for her, and she got annoyed by the fact that her grandson could enter it but she could not.

"*Well I had my BT account online, my son – my grandson fixed me up a password and every time I put it in I followed all the instructions, you put your name, your account number and then you put your password and then you ask to be logged into your account. Do it again. Do it again. Do it again – he just does it straight away and it's there. I do it three times and they tell me*

that I've got to change my password because it's wrong. And it's exactly the same as what he's done. So you see I get annoyed with it so I don't want to know."

However, at the same time, Mrs. C enjoyed playing Scrabble game in the online world with other people. Therefore, the frustrations did not completely inhibit her online world social participation. She did enjoy some activities in the online world.

This subtheme showed that participants experience frustration and anxiety during their online world social participation. However, most of them overcame it and continued participating in different activities in the online world, whereas a few gave up using different online world activities that created frustration in them. However, those participants enjoyed some other online world activities that they found easy to use.

4.6.3 Sub-theme 4.3: Happiness

The data collected from the participants showed that they were happy with their online world usage and it was very helpful in their life. The participants think that it would not be the same as it is now if they did not have the online world.

Mrs. T uses the online world for many activities, and she thinks the online world has made life much easier for people. Many things can be done online, saving time and effort, as she explains that purchasing her rail ticket and bus ticket online saves her traveling to and from Bournemouth. She is very happy with her usage.

"I am happy with what I do".

Miss. M said she enjoyed the online world and felt happy and lucky with it. The online world has helped her in many ways, especially to keep in touch with her friends, volunteering, support groups, shopping and information browsing.

"*I mean it's your own thing to go and change what you don't like about your life but I think that would be the Internet without Internet I would really very lonely and very unhappy. And I think life would have been not as good as it is now without Internet*".

Mr. K spends a lot of time in the online world now as he is unable to take part in physical world activities following his stroke. He thinks of his laptop as his companion.

> *"It's something to do but as I say, it just passes my time. Yes, I couldn't think of – I don't know really. What I'd have done without my laptop. I always enjoy my time I spent with my laptop."*

Mr. M is a gentleman in his 70s, who is very active in physical world activities and online world activities. He thinks that there are many opportunities in the online world. However, he is happy with his usage in the online world, and he would like to draw a limit for his usage rather than spending hours on computers.

> "*I'm happy with what I do, yes, at the moment. I've got – it seems as though we've got so much on our plate at the moment, which we do that I haven't got time, or I personally don't feel I have got time to spend more time on the computer."*

This subtheme showed that participants think they are happy with the online world as it has helped them in many ways. The participants have been using the online world for different purposes. However, they seem to enjoy their online world usage and think that it is a great opportunity for them.

4.6.4 Sub-theme 4.4: Perceived worthwhileness

The data collected from the participants showed that social participation in the online world has helped people to live a rewarding and easier life. It has improved their overall social participation in the physical world and the online world.

Mrs. T uses the opportunities of the online world, and it has helped her to improve her overall social participation in the physical world and the online world. She thinks she is still on holiday after her retirement after moving to Bournemouth from London.

"Oh very, very busy, very fortunate – we've met some, as I say some really lovely people and we have been – I think we're blessed every day and I still think I'm on holiday."

Mrs. T thinks the online world is a bonus to her life and she is very fortunate to have it.

"*I suppose if we'd never had the Internet we wouldn't know any better, would we? So, therefore, we would have carried on in the old way. It's definitely made life easier– we've taken it as a given but actually, we are very fortunate to have it*."

Furthermore, Mrs. T thinks that it makes people lazier in some ways. However, she thinks it helps us all and would like to appreciate it rather than focus on the negative side.

"it does make life easier definitely but if we didn't have it then we wouldn't know any better and – and in some ways it's made us lazier? And especially I think about relationships because it's very easy isn't it to send a quick text or e-mail and – rather than be on the phone for – or actually the bother of going to see people, I think it has made us lazier. But if we didn't have it I suppose we would just have carried on. But yeah, it's a bit of a bonus that we've got it"

Mrs. T is quite competent and confident about the security of the online world and it is not a worrying factor for her. When asked about any factor that makes her worry, especially security issues, she responded that she was not worried about the security as she was aware how to set the privacy settings.

"*There are ways of making it more secure if you want to. You can make it more private if you want to and that's up to us to do it. But no, I don't worry about it, no.*"

Another participant, Mrs. B, is very active in the online world as well as in the physical world. She is socially connected with the help of the online world, which she thinks

is good. Mrs. B is very happy with her current usage of the online world. However, she would not like to learn further as she thinks she is satisfied with what she is doing at the moment and she is well involved in many activities in the physical world.

> "*I'm quite happy that – it suit what I do and we – I have such a social life I don't think I'd have time to because I'm very involved in the bowls – very involved with the bowls so – and I, you know, I wouldn't no. I belong to a choir, we go walking so – and I belong to Probus, which is like a ladies, well it's like a ladies luncheon club really, so I belong to that as well and I've got friends from their separate to my bowling friends so – and to be quite honest I haven't got time to be learning*."

Moreover, Mrs. B thinks that online contacts help her to arrange their physical world activities and catch up with her friends.

> "*I do, you know, we are always going out for lunch or for coffee or what have you. But that we do all verbally but we will send a message through to say where to meet, what time, so we do – rather than, you know, you don't use the phone. We all send an e-mail, you know, one of us will send an e-mail and say well we're going to wherever, the Circle Lounge in Westbourne, meet 11 o'clock on Wednesday or whatever. So we do – I do use it for that, yeah, yeah*".

However, Mrs. B thinks that it is affecting people's physical world social contacts like face to face meetings and phone calls.

> "*Oh yeah, I do. The only thing is it does – you are inclined then not to use the telephone so much, so you are not speaking to people so much, which I, it does worry me for the future because I can see people having babies and the babies – the mother won't – will be giving them a machine, speak into that."*

Furthermore, another participant, Miss. M, thinks that the online world is the best thing that has happened to the world, and she would not like to think of living without it now. She is very active in the online world as well as in the physical world and recommends it for all older people.

"I think especially for some with mobility challenged; I think it would be a really good thing to get involved indefinitely. I think actually it can save you a quiet bit of money because you can always find the cheapest price on everything and somebody Who are more stuck at home, it gives some access to things that they might not normally able to find. That would make their own lives bit nicer".

This subtheme showed that the participants who were actively using the online world felt that their well-being is improved by their online world social participation. It has helped them to participate and organize physical world activities, communicate effectively, saving money, time-saving and making life much easier and convenient. The field note also reflected that the participants who were actively using the online world were satisfied with their life and reflected positive vibes in their life and improved subjective well-being.

4.7 Summary

This chapter outlined the data collected from 20 participants living in their own homes in the Dorset area. One of the key findings from the data was that the online world is an addition to the lifestyle of the participants. It has helped them in many ways in their life. In some cases, online world social participation facilitated the physical world social participation, whereas in other cases, online world social participation has compensated for their physical world social participation, and contributed to their physical world social participation. Although most of the participants agreed that the online world was a bonus for them, very few did not enjoy it. However, most of them personally think that the positive aspects of online world outweigh the negative aspects.

Another key finding was about the factors that affect the online world usage. The main factors were the availability of resources, compatibility, portability, skills, need, interest, openness to learning, reluctance to change, security and support. Moreover, another key finding reflected the experiences of the participants during their online world social participation and showed that people felt they were connected in the online world. Their overall connectedness was improved with the

online world. For most of the participants, online world social contact was an addition to their social contact in the physical world, and they found the opportunities they enjoyed now to keep in touch with people, especially living far away, they would not have without the online world. Furthermore, the last theme illustrated that the older people felt that their subjective well-being was improved by their social participation in the online world, and it helped them to participate in different activities in the physical world.

5 Discussion

This study explores the perception of older people about their online world social participation, which is diverse, complex and depends greatly on their experiences and circumstances. This section discusses the main findings of this study in the context of the wider literature.

5.1 Perceptions of older people about their online world social participation relative to their social participation in the physical world

The findings of this study demonstrated that older people generally perceived the online world as an addition to their lifestyle. Participants perceived many benefits of using the online world and illustrated the different ways it is helping their social participation in both the online and physical world. The findings also exhibited the diverse nature of the online users in this study. Moreover, the findings demonstrated the main factors affecting their social participation in the online world.

5.1.1 Online world is an addition to the lifestyle

Participants in this study in general perceived the online world as an addition to their lifestyle. This is one of the key findings of this study. Participants experienced that the online world was helping them in many ways. It has become a part of their lifestyle now. Online world activities appeared to be an addition to their physical world activities, and the two were linked and not seen as separate entities. A few previous studies looked specifically into the perception of older people and their online world usage. The previous studies will be discussed below, which yielded mixed results, which agrees and disagrees with the above findings.

A study in which participants demonstrated a positive approach towards online world usage was conducted by Mitzner et al. (2010) among 113 American older adults and reported that they perceive the benefits of technology use outweigh the cost of such use. In their study, the positive attitudes (likes) of the participants

outweighed the negative attitudes (dislikes). However, in my study, the participants highlighted the positive aspects rather than the negative side of the online world. In Mitzner and colleague's study, the older people participated in the focus group and discussed their use and attitudes about technology in the context of their home, work and healthcare, including computer, microwave, cellular phone, television, telephone, DVD VCR, fax, scanner, digital camera, blood glucose monitor, blood pressure monitor, and the internet. However, in my study, the online world involves information and communication technology devices like computers, smartphones, tablets, laptops and applications, including websites, social networking sites, email, web chat, discussion boards, and other applications connected by the internet.

There are a few other studies that contradict the findings of this study. In general, participants in this study perceived the online world as an addition to their lifestyle. The participants in this study mostly perceived that they cannot live without the online world completely due to the influence of the online world in the last few years. However, this was contrary to the findings from the unpublished 'digital by default' opinion poll conducted by Age UK in 2013 (Green & Rossall 2013). There was a strong feeling (94%) in the opinion poll that older people should give opportunities to access the services outside the online world in person, post or over the phone. However, most of the participants in my study reported the convenience of online services such as the train or bus or flight booking, online banking, paying bills, and accessing other services from the comforts of their home. Moreover, the non-users of my study gained support from others to access the online world for different purposes. The participants highlighted that the online world is helping them to access these services conveniently.

Additionally, this finding of my study is contrary to the previous debate of the adoption of internet and technology by the older people and researchers, which was quoted as the 'digital grey divide' (Milliward 2003). Several studies argued that a digital grey divide exists with less adoption of technology by the older people (Morris 2007; Mubarak & Nycyk 2017), and a study about the digital divide conducted among the older people living in the Switzerland by Friemel (2016) identified that the digital

divide has shifted to the older people from younger generations. He concluded that the seniors over 70+ are partially isolated from the network. There may be other reasons that my study showed a greater adoption of technology such as participants volunteered because they felt comfortable with technology, and the number of participants in a qualitative study is less compared to the survey research. However, the figures from ONS (2016) showed a greater adoption of 64% compared to previous years of older people in the online world. Even though many older people still need to be included in the online world in the UK, as per the ONS statistics, and the findings of my study are showing a greater degree of inclusion of older people in the online world instead of isolation. The grey digital divide appears to be shrunk in the last few years. This was reported in a study by Chang et al. (2015). Their study indicated that the digital divide has diminished but has not disappeared among the older people living in South California.

In another qualitative study, conducted by Hill et al. (2015) among the UK older adults to identify their experiences and perceptions of digital technology, highlighted both disempowerment and empowerment of technology in the participants' lives. The participants discussed the existence of a digital divide and how digital technology not only facilitates and empowers their well-being but also increases isolation and loss of access to participation in the democracy/civic duties within their communities. However, the older adults who participated in their research were a digitally aware group of older people and used a broader meaning for digital technologies, including televisions and telephones, along with internet and its applications. But the participants of my study showed increased adoption of the online world into their lives and showed a positive swing from isolation to inclusion. Furthermore, the results of my study showed the integration of the online world into the lifestyle of older people.

Many other studies looked into the online world usage among the older people using different interventions such as tablet training (Vaportzis et al. 2017), computer training classes (Gonzalez et al. 2015), and using specific applications such as Facebook (Nef et al. 2013; Hage et al. 2015) and an iPad (Gjevjon et al. 2014), which

is different from my study. These studies were using interventions in most cases to get older people into using the online world rather than my study, which was exploring the older people's online world the usage in different activities.

Although other studies demonstrated a positive approach by older people towards the online world, no other studies reported the integration of the online world into the lifestyle of the older people, and therefore this is new knowledge generated from this study. The ways in which the online word helps older people to participate in different activities in the online and physical world and other benefits are discussed in the next sections.

5.1.2 Diverse online world users

Although this study showed the shrinkage in the digital divide and a greater degree of inclusion of older people in the online world, there exist notable diversities and some similarities in the participants' usage of the online world activities in this study. Very few studies have explained the diversity of older online users. Most of the studies tend to label older people as a digitally excluded group and highlight the phenomenon as a digital divide (Morris 2007; Friemel 2016; Mubarak & Nycyk 2017). However, it is to be noted that like the rest of the age group, the older population is diverse with various skills and attitudes towards the online world usage, and therefore my study identified the similarities and differences in the online world participation in different social activities of the participants and classified them into different categories. The classification of the participants in my study was based on their frequency of online world activities, self-rated skill levels and nature of their usage. Their physical world social participation is also compared to understand their overall social participation.

Few studies have categorized the general population based on their digital skills (Philbin 2013; Brandtzeg et al. 2011). Very few studies have categorized older people. For example, a study by Gjevjon et al. (2014) identified three typologies of technology with older users. They were the excluded, the entertained and the networker. The excluded users were the reluctant non-users of technology. The

entertained users were enthusiastic, frequent technology users, and their focus of usage was for entertainment. The networker user is also an enthusiastic frequent user; However, the focus of technology use is for communication with others. Gjevjon and colleagues focused on the purpose of the usage of the technology to classify the users. However, my study classified the participants based on their frequency of online world activities, self-rated skill levels, and nature of their usage. Moreover, their study was conducted by introducing tablets (iPad) to inexperienced users and conducted several workshops to facilitate their usage and collected data from participants. In my study, the overall usage of older people's online world was explored and categorised the participants based on their online world activities, self-rated skill levels, and nature of their usage. This was not previously reported in any studies and therefore is a new knowledge generated from this study.

Participants of my study were categorized into five groups. They are online immersers, online amusers, online transitioners, online inhibitors and online non-user. These categories were designed based on the data collected from the participants and by analyzing their self-rated skills, nature and frequency of the usage. Online immersers demonstrated the higher usage and online inhibitors demonstrated rare usage, and the other two categories fall in between these two categories. There was no usage of the online world by online non-users.

Categories of older user	**Frequency of the usage**	**Self-rated skills**	**Nature of usage**
Online immersers	Many times, daily	Competent user	Different applications for multiple purposes and enjoyed the activities. Not active in physical world.
Online amusers	Few times, daily	Competent user	Different applications for multiple purposes and enjoyed using the online world.

			Active in physical world.
Online transitioners	Few times, weekly	Intermediate users/Novice users	Very few applications. However, they enjoy it and constantly try to learn more. Active and not active in physical world.
Online inhibitors	Few times in months	Rare user	Not using any online applications. Occasionally use with the support of family members. Not active in physical world.
Online non-user	Not using	Non-user	Not using as no resource available. Active in physical world.

Table 2. Categories of older users

5.1.2.1 Online immersers

Online immersers are the category of people who spend most of their time in the online world. Two participants in this study fall under this category. Participants under this category spent a lot of time in the online world. Frequency of usage was many times in a day. Most of their day included using online world activities. As individuals are different, therefore their purpose of spending their time in the online world differs. Both the participants used different applications for different purposes. They used it for entertainment and networking. Therefore, this contradicts the categorisation of older people by Gjevjon et al. (2014). In their study, the participants were categorised as excluded, the entertained and the networker, based on the purpose of the usage. However, participants under this category reported that their nature of the usage included different applications for multiple purposes, and they enjoyed the activities in the online world. Moreover,

due to the frequent usage of online world activities, they have gained very competent self-rated skills for using the online world.

However, both participants spent limited time in the physical world for social participation. As most of the time was spent in online world activities, it is obvious that they spend less time in the physical world. This category of participants contradicts with results of the study conducted by Ihm & Hseih (2015), where they identified that the instrumental use of ICT helped offline social engagement and supports their other hypothesis that social use of ICT was not associated with offline social engagement. However, the reasons were different for the participants of this category for not participating in the physical world activities, but the similarity was that they both moved to a new place of living after their retirement and due to their health conditions. This was previously reported in many studies that there were several factors, such as retirement, age-related disability, relocation or loss of family and friends, health condition and socio-economic status, which can lead to social isolation and loneliness in older people (Nicholson 2012; Butler & Lewis 1982; Zaidi 2014). However, the online world helped this category of participants to overcome the social isolation and loneliness, as they enjoy their activities in the online world.

5.1.2.2 Online amusers

Online amusers are the category of older people who spend limited time daily on the online world and make the most of it. Six participants of this study fall under this category. They are active online world users but at the same time, are actively involved in different activities in the physical world. Frequency of the online world activities includes a few times' daily usage. Although, the purpose of their usage differs; the nature of the usage included different applications for multiple purposes, and they enjoyed using the online world. They use the opportunities and applications in the online world to organise their physical world social activities. The participants reported that they are competent in the online world but always like to draw a line between the online world and the physical world and would not let the online world take their physical world social activities. Interestingly, they all are open to learning new applications. This differs with the categorisation of older people by Gjevjon et

al. (2014), as the participants of my study use the online world for both entertainment and networking.

Participants of this category reported that they are active both in the online world and in the physical world, and the online world helped to organise their physical world social activities. A similar finding was reported in the study conducted by Ihm & Hseih (2015), where they identified that an instrumental use of ICT helped offline social engagement, which supports the finding from this study for this category of participants. However, their study reported that social use (social contacts) of ICT and offline social engagement did not show any relation. This is contradictory to the findings in this study, where social use as well as instrumental use helped participants in this category for their physical world social participation. Furthermore, this category contradicts the finding of the study conducted by Kim et al. (2017), where ICT use for personal task was negatively associated with formal social participation. Online amusers use opportunities and applications in the online world to organise their formal and informal physical world social activities.

5.1.2.3 Online transitioners

Online transitioners are the group of people who spend limited time weekly on the online world and struggle to some extent to use it. They are in a transition stage where they try to use the online world a few times weekly. However, they get stuck, less motivated, and concerned about the security, but constantly try to use and learn the technology. Some people in this category are active in the physical world while others are not. This forms the largest category of the participants in this study, where ten participants fall under this category. Frequency of the online world activities vary from a few times weekly. The nature of the usage under this category includes difficulty in usage due to lack of skills. Most of them use one to few applications. However, they enjoy it and constantly try to learn more, and their purpose of usage differs including entertainment and networking. Therefore, this category also contradicts with the categorisation of older people by Gjevjon et al. (2014), as the participants used the online world for both entertainment and networking.

Physical world social participation of this group varies. Some are actively participating in different physical world social activities, whereas some are not active in the physical world social participation. However, it was reported by previous studies that several factors affect the physical world social participation such as health (Engedal et al. 2012) and disabilities (Raymond and Grenier 2015), along with physical factors (Lavasseur et al. 2011; Lavasseur et al. 2015a; Lavasseur et al. 2015 b; Dahan-Oliel et al. 2010). Therefore, these factors may have affected the social participation of participants of my study. As the online world has helped some for improving their physical world social participation, this partially agrees with results of the study conducted by Ihm & Hseih (2015), where they identified that instrumental use of ICT helped offline social engagement.

5.1.2.4 Online inhibitors

Online inhibitors are rare users of online world activities. In this study, one participant was a rare user of the online world. The rare user owned a device but was not using it, mostly. The rare user has access to resources but due to a lack of skills, does not use the online world. The frequency of the online world social activities usage maybe once a month when her family supports her to use it. The participant uses the online world only with a family member and has no usage by herself. Self-rated skills were reported as non-competent. Moreover, the rare user showed a negative attitude towards the online world. Although she owned the resources to use the online world, the participant was inhibited from the online world. The excluded category by Gjevjon et al. (2014) that are reluctant and non-user showed similarities with this category. They are reluctant to learn further, and the lack of skills restricts their usage.

5.1.2.5 Online non-user

There was only one complete non-user of the online world in this study. The non-user was competent in the usage, however, no access to a device was available and therefore, they are restrained from the online world. Self-rated skills for the non-user was rated as competent by the participant but a lack of resources restricted her

online social world activities. However, the non-user showed a positive attitude towards the online world. The excluded category by Gjevjon et al. (2014) contradicts with this category. Reluctant non-users in their study focused on negatives of the technology and restricted usage. But the participant in my study under this category showed a positive attitude towards technology and was looking forward to using the technology in the future when resources are available.

Online inhibitor and online non-users are users unable to use the online world, due to the lack of skills or lack of resources. Categorising the participants into different groups in this study highlighted the diversity in the usage of the older online world. Categorisation based on their frequency of online world activities, self-rated skill levels, and nature of their usage is not reported in the previous studies and is a new knowledge generated from this study. However, it is to be noted that there may be more categories within each of the above categories due to the diversities in individuals. Therefore, future research should be carried out to identify more of this in a wider older population.

As stated at the beginning of this section, there was a shrinkage in the 'grey digital' divide, which was evident in this study and was seen in the recent ONS statistics. However, this does not mean that older people are confidently using the online world; rather, they started using the online world and their usage differs and was categorised in this study. However, out of the categories, online transitioners form the largest group. This shows that there emerges a new divide which could be termed as the 'grey transitional phase', where people from the grey digital divide moved to this early user level where they need considerable hard work and some support to move into the grey digital inclusion phase, where people confidently use the online world opportunities. Otherwise, this could result in a reverse phenomenon where they could become an online inhibitor or non-user. The figure on the next page illustrates the categorisation of the participants in this study where the grey digital divide and grey digital transitional phase together forms more than half of the participants.

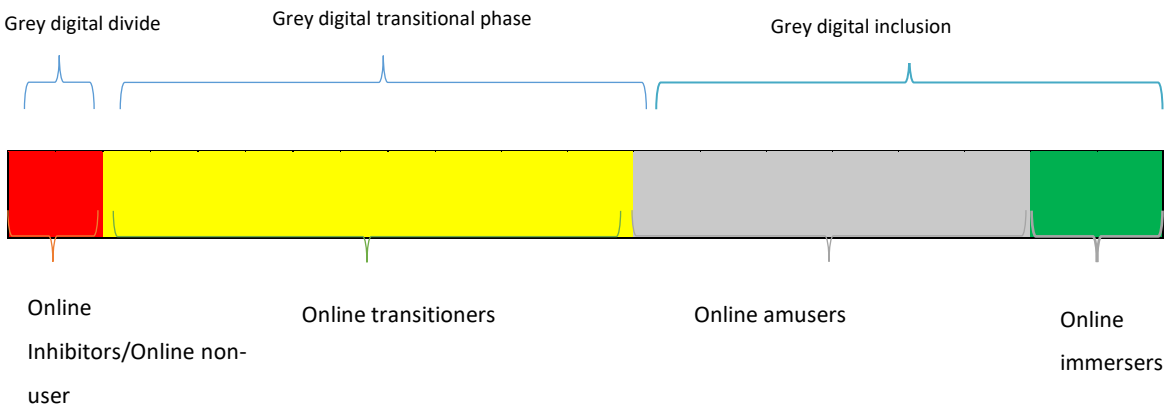

Figure 10. Illustration of grey digital transitional phase in the study

Although some studies argue that the digital divide still exists between the older and younger generations (Friemel 2016; Mubarak & Nycyk 2017) or some studies illustrate the shrinkage of the grey digital divide (Chang et al. 2015), similar to this study, no other studies have identified this new phase, termed as the grey digital transitional phase of older people using the online world, and therefore, this is a new knowledge generated from this study. However, in a report (Berry 2011) about older people and the Internet, it was mentioned about the second order digital divide of skills and attitudes. Therefore, policies should aim to target online non-user, online inhibitor and online transitioners to support them to enter into the digital inclusion phase.

5.1.3 Benefits of using the online world at a later age

The participants in this study highlighted many benefits of using the online world. The findings presented in this thesis demonstrate that online world social participation is helping some participants from social isolation and loneliness, especially for participants with friends and families abroad and participants with health conditions. Online world social participation has enabled them to keep their social contacts with family and friends living in different parts of the world, and they engage in different activities in the online world, where health conditions have restricted their physical world activities, thereby helping them to mitigate loneliness and social isolation. Many studies have previously explored this and my findings support previous studies. For example, Sum et al. (2008) identified that older people using the Internet as a communication tool were less likely to feel loneliness.

Another study reported that computer and internet interventions reduced loneliness and social isolation in older people (Choi et al. 2012). Moreover, several other studies on internet use and older people have proven that the Internet has the potential to reduce loneliness and social isolation in older people (Cotten et al. 2013; Blazun et al. 2012).

Another notable benefit highlighted in this study was the benefit of playing games online. Participants acknowledge that it keeps their brain working. This was previously reported in other studies. For example, a study by Torres (2008), identified that the use of videogames resulted in the improvement of cognitive functioning in older adults. They used simple games and memory games in their interventional study. Participants in my study also played simple games such as word searches, card games, Parables and other simple games. Another meta-analysis study suggested that training older adults with video games enhances several aspects of cognition and might be a valuable intervention for cognitive enhancement (Toril et al. 2014). Furthermore, study by Ballesteros et al. (2014) reported that training healthy older adults with non-action video games will improve some of their cognitive abilities. Therefore, my findings support the findings from previous research.

In my study, the participants suggest that playing computer games is also meant to be an entertainment to keep their leisure time occupied. Moreover, it sometimes enabled them to socially connect to other people playing the same game online with them. However, participants of my study did not report the establishment of new social ties as a result of playing games. But they played with people known and unknown to them. However, their playing with other unknown people did not result in establishment of new friendships. Osmanovic and Pecchioni (2016) in their study reported that older people played online games for enjoyment as an important aspect. Moreover, older people reported that maintaining connections with each other was also another important factor and shared gaming opened up opportunities for them to talk casually or to initiate discussions about more serious topics. However, their study compared the intergenerational playing as well as older

people playing games with their family members. A few other studies also reported the positive effects of video games (Salmon et al. 2017; Nguyen et al. 2017).

Another benefit pointed out by the older people include the enhancement in well-being and social connectedness, which will be discussed further in the next sections of this chapter. Finally, the most key benefit highlighted by the participants was that the online world social participation helped their physical world social participation. Very few studies addressed the relationship between online world social participation and its effect on physical world social activities. For example, a study conducted by Ihm & Hseih (2015) investigated the instrumental uses and social uses of ICT and its relation to the offline social engagement of older adults living in the Chicago region. The findings from my study supports and differs with their findings. Their study identified that there was a positive relationship between instrumental use of ICT and offline social engagement. Instrumental use of ICT in their study indicated using ICT as a means or 'instruments' to obtain useful information, services, or other resources without direct interaction with others. However, in general, my study considered all activities in the online world, including social contact, contributing resources or receiving resources as social participation, which includes both instrumental and social use. Therefore, this finding supports the finding from Ihm & Hseih's study.

However, their study did not show any relationship with social use (social contacts) of ICT and offline social engagement, which differs from the finding of this study. Social participation in the online world in this study included social contacts, and participants clearly demonstrated that their social contacts helped their physical world social participation. Therefore, it differs with their finding. Moreover, participants of their study were 1,780 people aged between 60 & 86, living in the Chicago region, and therefore, the context was different from that of older people in the UK. Furthermore, it is to be noted that their study was a quantitative study and therefore failed to explore the perceptions of older people and explain how ICT is helping offline engagement, whereas this study identified the different ways the online world is helping physical world activities.

In my study, participants explained different ways in which online world social participation enhances their physical world social participation. For some participants, online world social activities are facilitating their physical world activities, whereas for some participants, it is compensating, and for others, it is contributing to their physical world social activities. This was not reported previously and is a new knowledge generated from this study.

Another similar study was conducted by Kim et al. (2017) about technology access and use and their associations with social engagement among older adults. Their study identified that there is a positive association with ICT access on women's formal and informal social participation, but only men's informal social participation. However, my study did not actually obtain the findings based on gender or type of social participation such as formal and informal. However, their findings showed that ICT use is related to the social participation of older women and informal social participation of older men. Furthermore, in their study, ICT use for health matters was only positively associated with formal social participation for women and with informal social participation of men, and ICT use for personal tasks was negatively associated with formal social participation in men and women, which also differs with the findings from my study.

In another study by Larsson et al. (2017), it was identified that individually targeted interventions might enrich older people's social activities and social contacts, both on the internet and outside. Their study also identified that social contacts using the internet was very valuable for the participants, but described that offline social contacts were something "different". However, their study was targeted on specific interventions for each participant, rather than overall online world usage. Moreover, their study did not explain how the online world social activities are helping physical world social activities of older people.

Findings from my study highlighted that online world social participation helped older people with their physical world social participation. Moreover, specifically, this finding demonstrated the different ways by which the online world is enhancing the physical world social participation: by facilitating their physical world

participation, compensating and contributing to their physical world social participation. This was not reported previously in the literature and therefore is a new knowledge generated from this study.

5.1.3.1 Online world social participation *facilitated* physical world social participation

Some participants in this study perceived that online world social participation facilitated their physical world social participation. This was demonstrated by examples like online world social group facilitating physical world social activities, arranging social club meetings, other activities and meeting up with friends in the physical world using online world social participation. Very few studies looked into the relationship of the online world social participation and physical world social participation, but none identified the ways the online world social participation is facilitating the physical world social participation.

5.1.3.2 Online world social participation *compensated* physical world social participation

Some participants in this study perceived that online world social participation compensated for their physical world social participation in some cases. This was demonstrated by examples like Skype calls with close family and friends, compensating to some extent than meeting them in person, playing online games such as Scrabble and word searches compensated for the same games they used to play in the physical world, reading online books during holidays, shopping online, support groups and accessing information.

Although previous studies identified the positive use of video chatting (Tsai & Tsai 2010), positive effects of playing games online (Toril et al. 2014) and benefits of the online support groups (Pfeil et al. 2009) nevertheless identified that online world social participation is compensating to their corresponding physical world social participation. Therefore, this is a new knowledge generated from this study.

Moreover, some participants reported the use of a Kindle to read books instead of hard copies. They found it much easier to carry it when they were on holidays and to accommodate in their flats or retirement homes. Kindle compensated for their reading in the physical world. No other study has reported this, and therefore, it is a new knowledge generated from this study.

5.1.3.3 Online world social participation *contributed to* the physical world social participation

Some participants in this study perceived that online world social participation contributed to their physical world social participation in some cases. This was demonstrated by examples like using specific software to conduct physical world meetings, online marketing using a Facebook page to run a business and searching online before shopping contributes to their shopping in the physical world. Previous studies investigated different online activities such as online shopping (Lian & Yen 2014). However, no study has identified its effect on the physical world social participation. My study identified that online world activity contributed to participants' physical world social participation in many ways and therefore, this is a new knowledge generated from this study.

5.1.4 Factors affecting the online world social participation

The debate of internet adoption by older people indicated a 'grey digital divide', and this study illustrated the shrinkage of this divide in the past years and the emergence of a new divide termed as 'grey digital transitional phase'. Participants of this study discussed several factors that affect their online world social participation. However, most of the factors are affecting their usage either in a positive or negative way. Most factors where identified in the previous literature, but some have a shift from their focus in this study, compared to the time when they were first reported.

5.1.4.1 Availability of resources

The findings of this study identified the availability of resources as an important factor affecting the usage of the online world. In this study, the findings demonstrated the availability of resources as the availability of devices, broadband,

training and training materials. This was a longstanding issue and was raised by the early online older users. Many previous studies (Chang et al. 2015; Vaportzis et al. 2017) have reported the cost of buying devices and availability of broadband as an initial issue for older people to gain access to the online world. However, in this current study, cost was not highlighted by most of the participants.

All the participants except one owned device and haven't highlighted the cost of buying devices as an issue. But one of the participants who was very interested in the online world could not access it due to the financial barriers. This was because the participant no longer had access to her finances. This may be due to the fact that older people may lose control over their finances at a later age due to protective actions against financial abuse or cognitive impairments (Alzheimer's Society 2011). This could limit older people from buying new devices or upgrading or fix their existing devices or buying broadband to access the online world.

However, many previous studies have reported the cost of buying devices as an initial issue for older people to use computers and internet. However, in this current study, most participants owned their own devices, and many possess more than one device. For example, Vaportzis et al. (2017) reported that cost is a barrier for buying devices, especially tablets, in her study, in contrast to this study. Moreover, several other studies have reported the cost as a barrier for buying devices or lack of access as an important factor for the usage of the online world by older people (Sandhu et al. 2013; Morris et al. 2007; Lee & Coughlin 2015; Carpenter & Buday 2007; Berry 2011). However, cost was not highlighted in this study as a barrier by most participants, and many of them owned more than one device. This disparity could be due to the advancement in technology in recent years, where there is a noticeable decrease in the price of the gadgets. Moreover, competitive markets and new marketing strategies resulted in a situation where most of the people own more than one device to access the online world (Copeland & Shapiro 2016). However, for one of the participants who was unable to use the online world in my study, cost hindered her access.

Availability issues regarding broadband was also not highlighted in this study. However, this was previously reported in the evidence review by (Morris 2007). OFCOM (2018) reported that the trends in pricing of home broadband decreased in past years and the availability of the data increased. Agreeing to this, availability issue of broadband was not illustrated by the participants in this study, whereas a few reported concerns about their data contract package on their mobile phones, which seem to be non-feasible for them, and as a result, they were not using the online world on their mobile phones unless they could connect to Wi-Fi. Although availability of resources like devices or broadband was reported before, it takes a new phase of an availability issue in this study, which is availability of mobile data instead of home broadband. This is a new knowledge generated from this study.

Another finding of this study illustrated the lack of availability of free proper training. Few participants reported that they attended initially the training at the libraries. However, the training seems to be irrelevant for them as it focusses Word, Excel and other packages, which are irrelevant to them. Moreover, the training was group based, which accommodated a large group of people with different competencies, and therefore they struggled to keep on with the training. Moreover, individual private training sessions seem to be very expensive for the participants. This supports the findings from previous studies. For example, a study by Minocha et al. (2015) identified that training is important to get older people online and recommended an evidence-based training initiative for older people in the UK. Moreover, the European initiative on e-Inclusion by European Commission (2010) recommended the need for training programmes that are more relevant to the older citizens. Digital Inclusion Evidence review (2018) by Age UK highlighted the importance of training for older people to access the internet and digitally include them to use the potential of internet. This is similar to the findings of my study, where participants perceive general training as sometimes are irrelevant to them and requires customised training on the basis of their needs. Therefore, although cost of devices and broadband is not very often holding older people back, the cost of training is to some extent and is still an issue for older people who want to use the internet to its full potential.

Another study conducted by Chang et al. (2014) reported the need of computer training classes for older adults to improve their adoption of technology. They suggested that offering computer classes for older people should take into account their functional limitations, slow learning process and feasible teaching strategies, along with giving one-to-one training. The findings of my study also suggest providing one to one training would be beneficial for the older people. Moreover, many other studies suggested training as an essential factor for adoption of technology by older people (Gatto & Tak 2008; Czaja & Sharit 2013).

The findings of my study also reported the importance of providing training materials written in an easy to follow, simple language, as they do not know the terminologies. Most of the participants expressed their interest to learn further to improve their skills and highlighted the lack of simple training materials to learn further. This was previously suggested in the study conducted by Gatto & Tak (2008), where computer training and development of internet accessible educational materials are few that can benefit older adults. However, the participants in my study confirmed their awareness about Google to search for training but reported that they find it difficult to understand different terminologies used in the training materials, and participants often referred to themselves as “Not brought up with technology”. The participants perceive most of the online training as assuming basic knowledge or understanding of the terminologies, which they lack. However, many studies previously reported that ensuring the materials covered for training needs to be of high interest to the older adults (Mitzner et al. 2008; Seals et al., 2008).

The findings from my study illustrated that availability of resources including availability of devices, availability of internet, availability of training and training materials are important for older people to use the online world. This supports the evidence in the existing literature. However, this study’s findings suggested the need of an affordable mobile data contract package for older people to use for mobile broadband, and this was not previously reported in the literature and therefore is a new knowledge generated from this study.

5.1.4.2 Compatibility

The findings of this study illustrated compatibility issues faced by the participants during their online world usage. Findings showed that participants raised concerns over the automatic updates that led their devices not to be in harmony with the technology, resulting in slower computers and failure of some software that they used for personal purposes. This issue resulted in frustration in the participants. These technological issues were reported previously in other studies. For example, in a study conducted among elderly persons in long-term care facilities about their computer use by Namazi & McClintic (2003), they reported technological factors such as slow computers to respond when loading software acts as a barrier for computer use. Therefore, this finding supports the evidence from the previous research studies.

Another compatible issue brought up by the participants of this study was about the website compatibility in different devices. The participants think that it is quite frustrating at times when they use the websites on a desktop computer and other mobile devices. They found it difficult with the layout of the websites. However, this could be due to the use of older versions of browsers without updates. Moreover, most of the websites provide a light version of their website for mobile devices, which might confuse people. Navigation issues while using browsers was reported previously in studies by Adams et al. (2005). Complexity of finding information, navigating, and using programmes were significant impediments for older people to use the internet (Carpenter & Buday (2006), and too much information and too complex technology (Vaporitzis et al. 2017) was reported in previous studies.

Another foreseeable issue brought up by the participants was with the passwords. The participants reported that they are forced to use many passwords that they need to remember, which is not feasible, especially for older people. It seems to be quite hard for them to keep on top of all the passwords, especially at a later age. Remembering passwords was a challenge reported previously in other studies (Renaud and Ramsay 2012). Moreover, many other studies reported the cognitive challenges faced by the seniors during their online world usage (Burmeister 2010; Sayago & Blat 2011). However, in my current study, different approaches were

adopted by the participants to overcome this password issue. Some people made a note of all their passwords in a book and referred to it when they needed it. Some participants used similar passwords with slight differences and memorised them for their future use. However, the participants reported that as there is no common criterion for password entry, and it differs for different websites, which seems incompatible for older people. This was a recommendation provided by the participants of this study. However, it seems that some participants were more concerned over the inconvenience of remembering passwords than security.

5.1.4.3 Portability

The findings revealed that many of the participants used multiple devices to participate in different activities in the online world. People using multiple devices in this study recommended a tablet as a very useful and portable device, as it is light and easy to carry around. There are mixed results in the literature about the portability of tablets for older people. For example, a previous study conducted by Jones et al. (2013) among the older people living in UK care homes reported a tablet as a portable device by their participants. However, in their study tablets/iPads were provided to the residents and they were trained on how to use them. They identified that the portable and adaptive nature of the iPads improves the quality of life of the older people in the care setting. Moreover, the participants also reported some limitations of the tablet, such as weight and screen resolution. However, these were highlighted as challenges rather than limitations to prevent their usage. However, in my study, people have expressed their own perceptions about the portability of the tablet in some cases, compared with the other devices. Most participants were using more than one device and they compared their usage with other devices and recommended a tablet over their desktops or laptop computers. This was not the case in Jones et al. (2013), where they provided only a tablet to the users and asked their perception on using the tablets.

In another study conducted by Vaportzis et al. (2017), it reported the advantages and disadvantages of tablets by older people. Participants noted few disadvantages of using tablets and highlighted that there was too much information, too complex technology, and other negative features such as tablets being heavy to carry around.

This differs with the findings from my study, where participants were delighted with the portable nature of the tablets and reported them as easy to carry around. This may be because most of them were using more than one device, like a desktop computer and laptop along with tablet, and the tablet might have felt more portable to them compared to the other two. Moreover, in the study of Vaportzis et al. (2017), participants were also impressed with the positive features of the tablets, which includes screen clarity, convenience and easy to access information. Participants of my study also perceived tablets as a handy device for quick usage and convenient for looking into Facebook, catching up with emails and other things online, even after a busy day. Moreover, the usage of different built-in and downloaded applications helped them to use the tablet for multiple purposes.

The significance of this finding is that participants reported that they tend to go online more often using their tablets than with other devices, which was not previously reported. Moreover, in the current study, people compared the other devices that they use and reported the tablet as the most portable and convenient device. This is different to other studies like Jones et al. (2013) or Vaportzis et al. (2017), where a tablet was introduced to the users, who reported their feedback after their usage of tablets. Moreover, in both studies, participants were novice tablet users.

Another significant finding of this study is that the participants perceived the portability of Kindle to read books. They felt it was easy to carry around when they are on holidays and was saving the space in their flats. Therefore, the Kindle was also reported to be an easy and convenient reading gadget. This was not previously reported in the literature and therefore is a new contribution of knowledge generated from this study.

5.1.4.4 Support

Findings from my study showed that support from family or friends or other professionals are important for older people to use the online world opportunities. Many participants in my study reported that they have limited knowledge of technology and had not essentially had prior experience of using computers at work.

However, older people who participated in my study think that they are not best served, and they lack the support they need to use the online world. This was reported previously in many studies. For example, the review conducted by Lee & Coughlin (2015) identified technical support and social support as two main determinants for technology adoption of older people. In their review of literature, they have identified that availability of professional assistance and support from family, peers and communities helped the adoption of technology by the older people. This was similar to the results from my study, where many participants reported that they learned using the online world from the training programs in the library, private training centres, learning from family or friends and self-learning.

Although support from family and friends will help the older people to use the online world, participants of my study perceived that the family members or friends do not always show enough patience to teach them to use the online world. Participants also felt that asking several times irritated their loved ones. Moreover, participants commented that they did not want to spend too much time with the technology when their family or friends visit them occasionally. Support from family, friends and peers was reported as an important factor for gaining digital access and for sustained ICT use by older people (Tsai et al. 2017). Moreover, as family members were busy with their lives, their level of support often consisted mostly of encouragement to independently learn and explore. Participants of my study perceived that they do not wish to seek the support from their family and would prefer external support.

My study identified that the level of support required varies for older people. The online non-user requires support to get access to the online world, whereas online inhibitors require higher level of support to encourage the usage, online transitioners require a high level of support to continue their use, and online amusers and online immersers require support only at times. Moreover, participants of this current study recommended that they need a 'walk-in support' like a helpdesk or service desk where they could go and ask people and show the participants how to get on with the issues, they face during their online world activity. This might help older people to gain adequate support as well as enhance physical world social participation.

5.1.4.5 Skills

The findings of my study revealed skills as an important factor affecting the online world usage by older people. Lack of essential skills to use the online world kept participants away from technology rather than embracing it. Most of the participants were new to the technology and lacked the skills to use it effectively. Although this study did not measure their skills, participants were asked to rate their skills. Moreover, few reported that they had used earlier versions of computers at work before retirement, which they cannot relate to the modern devices. A lack of skills has been reported in the previous studies as an important barrier for older people to use the online world (Morris et al. 2007; Gitlow 2014; Chang et al. 2015).

Participants of my study perceived that trying out different things in the online world by trial and error gave them the confidence to use the online world. They also reported that it took the fear away from them of ending up in breaking the devices. Therefore, even if they thought they lacked skills, it wasn't a barrier to them as they were willing to learn through experience. This was in consistent with previous studies where older people try the trial and error method to make use of different opportunities of the online world (Barnard et al. 2013; Tsai et al 2017). However, findings of this study also showed that a lack of skills generated fear in some participants, especially online inhibitors and some online transitioners, of breaking the devices and therefore, it limited their usage of online world. It was evident that participants who tried the trial and error method overcame their fear gradually and used the online world more frequently in my study.

5.1.4.6 Perceived need

Findings of my study illustrated perceived need as an important factor contributing to the usage of online world activities. Perceived need helped older people to choose the activities that they need to do in the online world in this study. Previous studies reported perceived need as a factor for use or non-use of the online world. For example, in a systematic review conducted by Peek et al. (2014), perceived need was identified as an important factor for older people to use digital technologies required for ageing in place. However, their study focussed on all digital technologies, including assistive technologies, enabling older people for ageing in place.

Other studies like Melenhorst et al. (2006) conducted focus groups on non- internet older users and identified no perceived benefits or lack of interest as the main reason for not using internet. Furthermore, Wagner et al. (2010) reviewed literature on internet use in older adults and found a lack of perceived benefit to be a major factor for internet non-usage. However, in this current study, perceived need contributed to choose their activity rather than use the online world, whereas in previous studies, perceived need decided whether they need to use the online world. Therefore, perceived need is an important factor for older people to choose the online world usage, as stated by the other studies, and choose specific activities, as per the findings of my study.

5.1.4.7 Interest

The findings of my study highlighted interest as an important factor that motivates older people to use the online world. This was previously noted in the literature. For example, a study conducted by Carpenter and Boday (2007) identified that lack of interest resulted in the non-usage of internet and computers. Moreover, a study conducted by the Peek et al. (2014) reported interest in technology as a factor that contributes to the adoption of different technologies by older people. The findings of my study showed that interest is required for starting to use the online world and is an important factor for sustaining the use of the online world. This is also an important factor in choosing the type of activity they prefer to do in the online world. Participants were using the online world and engaging in different activities that are of their interest. Therefore, my study illustrated that interest contributed to the usage of online world and in choosing the type of activities to engage. Previous studies identified interest as a factor in usage or non-usage of internet or digital technologies.

5.1.4.8 Openness to learning

The findings from this study informed openness to learning as an important factor contributing to the usage of the online world. Recently, there has been an increased importance in using personality as a predictor to technology adoption. Openness characterized by originality, curiosity, and ingenuity is one of the five personality traits that significantly impact technology acceptance and adoption (Mitzner et al.

2016). A study conducted by Mitzner et al. (2016) identified personality dimensions of agreeableness and openness to experience, and attitudes affect older users' technology adoption, along with other factors. Therefore, findings from my study support their results. Moreover, the significance of this finding is that older people who are open to learning and accept challenges falls in the online amusers' and online immersers' category, whereas others fall into the online inhibitor or online transitioners' category.

5.1.4.9 Reluctance to change

The findings of this study showed reluctance to change as an important factor that contributes to the online world usage of the participants. This was reported previously as a factor that contributes to the adoption of the online social networking sites by the older people in the study conducted by Maier et al. (2011). In their study, Maier et al. (2011) identified the preference of older people to sustain their daily habits or routines, and the resistance to change these habits resulted in the non-adoption of the social networking sites.

In my study, the participants showed two types of reluctance to change that inhibited or limited their online world usage. They were the reluctance to change the device that the participants were using for years and the reluctance to change the way they were doing things. Maier et al. (2011) in their study identified that the reluctance to change the way they would communicate with their families and friends restrained them from using the social networking sites. However, in my study, the participants who were limited in their usage of the online world were reluctant to change the way they communicate or shop or read books or pay bills. They would like to follow the way they did these activities in the past. Therefore, this supports the findings of Maier et al. (2011) and adds to the knowledge that not only did the participants show reluctance to change the way of their communication, but they showed reluctance to change the way they do other activities like shopping or reading books or paying bills or banking.

Furthermore, the participants of my study showed reluctance to change the device they were using in the past few years. This was not previously reported in the other

studies. Most of the participants in this study started using the online world with their desktop computers. However, it seemed that the technology has updated, and some of the participants of this study showed reluctance to use the new device and carried on using the old device with limited functions. Therefore, the reluctance to change their accustomed devices resulted in the limited or restricted use of the online world. This is a new knowledge that was not previously reported in other studies.

5.1.4.10 Security

The findings of this study indicated that security is an important factor that affects the online world usage of older people. This might be mainly due to the unawareness of the security features and the real facts restraining many participants from using the opportunities of the online world. This was reported in many previous studies. For example, a study conducted by Mitzner et al. (2010) identified that security fears negatively affected older people's technology use in their home, work and healthcare. In their study, in the home and work domains, security issues were frequently highlighted by the participants when discussing dislikes of technology. Whether they were real or misconceptions, this has contributed to older adults' negative views about home and work technologies in their study.

However, participants of my study did not show an overall security fear to use the online world. However, they were concerned about the security in using some applications of the online world such as online banking, social networking sites and using video chats. Therefore, in my study, the security fears did not stop older people in using the online world but limited their usage to some activities in the online world.

This finding was consistent with the previous studies like Gatto & Tak (2008), where privacy issues caused many of the older adults to avoid activities on the internet that could put their personal information at risk for identity theft. Other studies also provided similar findings (McGareth & Astell 2017; Hill et al. 2015). Interestingly, in my study, online amusers, online transitioners and the online inhibitors showed concerns over the security in engaging in some activities in the online world.

However, there were some participants within these categories who were confident about the security. They mentioned that it is not just in the online world that they would be concerned about the security but the same could happen in the physical world. This supports the key finding of this study where older people perceive online world activities as an addition to their physical world activities, and the two were linked and not seen as separate entities. Therefore, they would like to take the security threat and face it as it comes.

The first two themes generated from this study were discussed in the above sections to address the first research question. The next section discusses the third theme related to social connectedness to address the second research question.

5.2 Perceptions of older people about the social connectedness they experienced during social participation in the online world

As discussed in the literature review chapter, social connectedness is an important dimension of social participation. Social connectedness is crucial for older people to maintain a high quality of life. This section discusses the perceptions of the older people about their social connectedness they experienced during their social participation in the online world.

The findings from this study showed that many participants used one or more online world activities to establish social contacts with their family and friends around the world. Participants who used different online world opportunities for social contacts with their family and friends felt that they experienced social connectedness by using the online world to maintain their social contact. However, a few participants used only face to face and telephone to establish social contacts. Moreover, participants using the online world also used face to face and telephone to keep in contact with their friends and family. Therefore, participants who used the online world for social contact perceived it as an addition to their social contacts in the physical world.

Very few previous studies investigated the relationship between social connectedness and social participation in the online world. For example, a research conducted by Culley et al. (2013) examined the relationship between technology and connectedness in community-dwelling older adults in South Carolina. However, their study did not identify the connectedness that older people achieved during the use of technology. Conversely, my study identified social connectedness experienced in older people as a result of the online world social participation.

Moreover, some other previous studies investigated the social connectedness achieved by considering different interventions. For example, the survey research conducted by Hage et al. (2016) identified the impact of the online communication on older adults' social connectivity in the Netherlands. They identified that email use has a negative impact on connectivity with a village, whereas there was no impact on connectivity with friends, but Facebook has a negative impact on connectivity with friends and no impact on village connectivity. However, they have used only Facebook and email and yielded a mixed result in contrast to the findings of this study.

Moreover, Morris et al. (2014) conducted the systematic review to identify the role of smart technologies to enhance social connectedness in older people who live in their own homes in Australia. They identified that smart technologies like internet programs may help older people to manage and understand their health conditions, better leading to subsequent improvements in aspects of social connectedness. The systematic review included 18 articles identified, which evaluated the effect of smart technologies on dimensions of social connectedness. Regardless of the growing acknowledgement of social connectivity as one of the key facilitators of good health, none of the identified studies in their review specifically stated that the use of technology was to improve social connectivity.

However, participants in this current study perceived the online world as an addition to their social contacts in the physical world, thereby enhancing their social connectedness. Participants reflected that the online world was providing them with the additional opportunities of seeing and keeping in touch with people who live far

from them or whom they would not see much. However, findings from this study revealed that mobile phones or telephones as the first point of their social contact and online world social participation is an addition to their social contacts, thereby enhancing their overall social connectedness.

A few other studies investigated specific interventions and their effect on older people's social connectedness. Another research conducted by Goswami et al. (2010) identified means of increasing social connectedness and social support among elderly through social participation in online social networking sites (SNS). Their study identified the potential of social networking sites to enhance social connectedness by overcoming the impediments faced by the elderly users. The findings from my current study also identified that older people improved their social connectedness by online world social participation by overcoming the impediments such as distance and functional limitations.

In another quantitative study by Sinclair & Greive (2016), it was identified that social connectedness could be achieved in the older population by using Facebook. Their study further investigated the extent to which social connectedness was achieved by the older people. However, in their study, Facebook social connectedness emerged as a separate factor to offline social connectedness, with correlations between the factors, indicating that they were distinct constructs. This differs with the findings from this current study, where the social connectedness achieved during online social participation is in addition to their physical world social connectedness. However, my study differs from Sinclair & Greive's study, where they identified only social connectedness achieved during Facebook usage, whereas my study explored all opportunities of the online world, including Facebook. Other studies (Cornejo et al. 2013; Milliken et al. 2012) identified different communication tools designed for older people's connectedness but focused only on a single intervention rather than overall social participation.

Different participants used different methods to keep in contact with their family members in my study. It mainly depends on the nature or the location of the family members. Participants used the phone, email, Facebook, WhatsApp and Skype to

keep in touch with family and friends. All means of communication were important to the participants. The choice of the means of communication depends on several factors such as distance and relationship. Findings from my study also revealed that participants with one or few social activities in the online world experienced a similar connectedness to the participants with many social activities in the online world. Therefore, the findings from my study showed that the quality of the network matters, along with the quantity. This finding supports the findings from the study by Gowsami et al. (2010), where social connectedness is characterised by the quantity and quality of the social connections older people establish within their social circle. However, their study investigated the social connectedness achieved using online social networking sites.

Another finding of my study revealed that active and passive Facebook users experienced social connectedness. In this study, some participants were actively engaged in Facebook and others were passively using Facebook. Active Facebook users post pictures, share content, comment and show their active presence, whereas passive users have a Facebook account and use it occasionally to log in and see the pictures posted by others and comment on them. They do not perform any activities on Facebook other than that. Most of the active Facebook users think that it is improving their connectedness as they can see what their families and friends are doing by seeing their pictures and posts, whereas passive users also felt that they are connected as they are updated with what is going on with their family and friends' circle. No other studies have identified social connectedness in older people by actively and passively using Facebook.

The findings from this study highlighted that online world social participation is an addition to their social contacts in the physical world, thereby enhancing their social connectedness. Moreover, many online world activities triggered their physical world activities and vice versa, thereby helping them to experience social connectedness in the online world and in the physical world. However, this added connectedness was achieved during their activities, which established connectivity, as discussed above, and also the functionality in the online world.

5.2.1 Connectivity

The findings of this study showed that the participants experienced social connectedness through the social contact. They perceived social contact through the online world is an addition to their social contact with their family and friends in the physical world. Previous studies identified that social contact using Facebook and other interventions improved social connectedness or family connectedness (Cornejo et al. 2013; Milliken et al. 2012). Nevertheless, a few other studies could not establish that online social contact enhanced their social connectedness (Culley et al. 2013; Hage et al. 2015). However, my study identified that social contact in the online world enhanced the social connectedness of older people and is an addition to their physical world social connectedness.

5.2.2 Functionality

The findings of this study showed that older people experienced social connectedness by social contacts and engaging in different other activities in the online world. Engaging in different other functionalities either involved the contribution of resources to society or receiving resources from society. Participants in this study were engaged in different activities such as volunteering, running social clubs, running walking groups, and running small businesses. Engaging in these activities in the physical world with the help of the online world social participation, not necessarily social contact, enhanced their social connectedness. This supports the finding of the research conducted by Llorente-Barasso et al. (2015) among the older people in Spain, where the internet was identified as an opportunity to optimize their habits of living and to contribute to active ageing. Further, in their study, Llorente-Barasso et al. (2015), among the older people in Spain, found the participants used the internet as a source for providing information, communication opportunities, administration and leisure opportunities. However, in their study, social connectedness was not investigated. Conversely, my study identified those activities other than social contacts also enhanced social connectedness in older people. The findings of my study revealed that functionalities also involved

information searching, receiving different services, booking tickets and holidays, and online shopping.

Key findings from this section highlighted that social connectedness achieved during online world social participation is an addition to their physical world social connectedness. Moreover, connectedness was achieved not only through connectivity but also through different functionalities. This was not evidenced before and therefore is a new knowledge generated from this study. Other findings also include that quality of the networks matter, along with the quantity, while experiencing connectedness. This was previously identified in the literature and therefore is supporting evidence from this study. Moreover, this study identified that active older Facebook users and passive older Facebook users experienced social connectedness by getting to know about their other close family and friend circles through Facebook. This was not evidenced before and therefore is a new knowledge generated from this study. The next section discusses the theme related to subjective well-being.

5.3 Perceptions of older people about their subjective well - being they experienced during social participation in the online world

This section discusses the perceptions of older people about their subjective well-being they experienced during their online world social participation. According to the conceptual framework developed by Tinkler and Hicks (2011) for measuring the subjective well-being for the Office for National Statistics, this includes mainly three overall monitoring factors. They are life satisfaction, happiness/anxiety, and perceived worthwhileness. Therefore, this section discusses the overall monitoring factors and subjective well-being perceived by the participants in this study.

In this study, the participants have shared their perceptions and experiences about participating in the different online world opportunities for social participation, including social contact, contributing resources to society and receiving resources

from society. The findings from the participants are grouped into four sub-themes in the findings chapter, under the theme subjective well-being. They were satisfaction, happiness, anxiety/frustration, and perceived worthwhileness. These four sub-themes contributed to a person's subjective well-being.

5.3.1 Satisfaction

The findings from the study showed that most participants using the online world for social participation experienced satisfaction. Very few previous studies have identified the relationship of internet usage and satisfaction. For example, a study conducted by Heo et al. (2011) explored the relationship between leisure satisfaction of older adults and their affinity towards the internet. Findings of their study suggested that older adults with higher levels of affinity for using the internet are likely to be satisfied with their leisure hobbies. However, their study explored the relationship between leisure activities and satisfaction, whereas this current study identified satisfaction during their social participation in the online world, which includes leisure activities as well.

Another study conducted by Lissitsa & Chachashvili-Bolotin (2016) investigated the impact of internet adoption on the life satisfaction of seniors in Israel, compared to the working age group from their national data during 2003-2012. Their study identified that higher life satisfaction was reported in younger age groups compared to senior citizens. However, life satisfaction increased moderately over time among younger age groups but remained stable for the older age groups. Contrastingly, after controlling the socio-demographic variables and health problems, older internet users reported high life satisfaction compared to young users. However, their study did not identify the purpose of the internet use by the seniors, whereas in my study, the participants enjoyed satisfaction due to their social participation in the online world. Participants in my study showed a diverse nature in using the online world, including a diverse level of skills, diverse activities and the diverse number of activities they participate in. However, participants showed pleasure in the activities they participated in in the online world and experienced overall life satisfaction. Few other studies explored life satisfaction in older people when

involved in specific activities such as online education (Dorin 2007) and internet training and use (Shapira et al. 2007). Therefore, this finding supports the previous studies.

5.3.2 Frustration/Anxiety

The findings of this study showed that most of the participants encountered some frustrations and anxiety during their online world social participation at times. This was mainly due to the lack of skills to use the computers or other devices. Most of them reported that they resolved the issues that create frustration at some point and continued their usage. This was previously reported in other studies that older people experienced frustration during their online world activities. For example, a study conducted by Gatto & Tak (2008), which identified that participants of their study enjoyed their time spent on internet activities, they were often frustrated with their learning experiences or use of the computer equipment and internet features. Moreover, participants reported frustrations while learning to use new technologies by older adults (Barnard et al. 2013). However, findings of this study showed that anxiety or frustration was in most cases temporary and have less effect on their online world usage. They continue to use the online world by finding a way to overcome the frustration caused by the online world. However, frustration was identified as a barrier for usage of the internet by older people in other studies (Turner et al. 2007; Goodwin 2013).

5.3.3 Happiness

The findings of this study identified that older people were happy with the usage of the online world. A few other studies have identified the relationship between happiness and the internet use among older people. For example, a study conducted by Lelkes (2013) identified that internet use can reduce social isolation and can bring happiness to the older population. In another study by Sum et al. (2009), it was reported that internet use had improved their satisfaction with general health, contact with family and friends, involvement with hobbies or interests, and overall happiness. Participants were asked to complete an online survey and 222 internet

users in Australia aged 55 years or older took part in their survey research. The findings of my study support the evidence from previous studies. Participants of this study also perceived that their life would not be the same if they were not part of the online world. Moreover, most participants reported that there are a lot more opportunities for them in the online world, which contributed, compensated and facilitated their physical world social activities.

5.3.4 Perceived worthwhileness

The findings of this study showed that social participation in the online world has improved the worthwhileness of most of the participants. Social participation in the online world helped the participants to live a rewarding and pleasurable retirement life. Moreover, the findings revealed that social participation in the online world has improved their overall social participation in the physical world, along with the online world. The findings showed that the online world is helping older people in many ways by making their life easier, improving social contacts, and acting as a helpful platform for their active life, and they are happy and satisfied with their online world usage. Many studies have reported positive effects of internet use in older people. For example, Action research conducted by Hasan & Linger (2016) identified that the social use of the digital technologies has the capability of enhancing the well-being of the older population. The main themes generated in their study were connection, self-worth/esteem and personal development, productivity, occupation, self-sufficiency, being in control, and enjoyment. However, there are studies that showed no effect of internet use. For example, research conducted by Dickenson & Gregor (2006) identified that computer use has no demonstrated impact on the well-being of the older people. However, although the participants of this study felt anxious at times due to the issues they encountered during their online usage, the participants perceived that the online world is overall worthwhile to use in their later age and increased their worthwhileness.

5.3.5 Subjective well-being

According to the conceptual framework developed by Tinkler and Hicks (2011) for measuring the subjective well-being for the Office for National Statistics, this mainly constituted three overall monitoring factors. They were life satisfaction, happiness/anxiety, and Perceived worthwhileness. However, according to Diener et al. (2002), a person is said to possess high subjective well-being if they have a high level of life satisfaction, greater positive effects, and little or less negative effect. Therefore, in this study, the perception of participants about their satisfaction levels of the online world social participation, positive effect- happiness, and negative effect- anxiety or frustration and perceived worthwhileness were explored.

The findings from this study showed that older people reported satisfaction and Perceived worthwhileness with their online world usage for social participation. Positive effect happiness was reported in the findings, whereas negative effect frustration and anxiety was also reported. However, these negative feelings were temporary and had less effect on their online world usage. They continued to use the online world by finding a way to overcome the frustration caused by the online world. Therefore, the findings highlighted that older people experienced satisfaction, happiness, and Perceived worthwhileness, while occasionally facing anxiety and frustration. Hence, the findings point out that the online world social participation has improved their subjective well-being.

Very few studies investigated the relationship between subjective well-being and internet use. A study by Chopik (2016) investigated the social technology use (i.e. using e-mail, social networking sites, online video/phone calls, online chatting/instant messaging, using a smartphone) of older adults and its relationship and physical and psychological health of older people. Their study also explored the subjective well-being experienced during the usage of the technology. Their study identified that higher social technology use was associated with higher subjective well-being, along with other factors. However, their study was conducted by collecting data from 591 older people from the 2012 wave of the Health and Retirement Study of US retirees. Subjective well-being was assessed with the

Satisfaction with Life Scale questionnaires and therefore failed to understand the perceptions of older people.

However, in all cases, the target population was not the older people in some other studies. For example, research conducted by Ishii (2015) in Japan identified that the use of LINE (an instant messaging application) has a significant correlation with subjective well-being for the participants. However, that study focused on the impact of online communication on the subjective well-being of a generalised population of all ages and not particularly on the ageing population. However, this study identified that the online world social participation has improved their subjective well-being of older people.

There are other studies that identified a positive effect of the online world on the well-being of older people. For example, a survey research conducted by Heo et al. (2015) among older Americans identified that higher levels of internet use significantly predict well-being, along with reduced loneliness and better life satisfaction. However, their study focused on the psychological well-being of the participants. Furthermore, the research conducted by Ihm & Hsech (2015) identified that the instrumental use of ICT has an impact on the well-being of the older adults.

Moreover, there are contradicting results where the research conducted by Dickenson & Gregor (2006) identified that computer use has no demonstrated impact on the well-being of the older people. Later, Nie et al. (2015) identified that internet use hardly has an association with the subjective well-being of the participants. However, the participants in their study were a sample of 16-60-year-old Chinese people. Nevertheless, the findings from this study showed that the online world social participation has improved their subjective well-being of older people. This was previously reported in Chopik et al. (2014) and hence supports the findings from previous studies. However, the difference between their study and my study is that the participants reported their perception in my study, whereas they measured the subjective well-being in Satisfaction with Life Scale questionnaires and therefore failed to understand the perceptions of older people. Many other studies explored the well-being and not specifically subjective well-being.

5.4 Summary

This chapter discussed the findings from this study in the context of a wider literature. Four themes generated from this study were discussed to answer the relevant research questions. Participants of this study generally perceived the online world as an addition to their lifestyle. Although other studies demonstrated a positive approach by older people towards the online world, no other studies reported the integration of the online world into the lifestyle of the older people and therefore this is a new knowledge generated from this study. Moreover, this study identified the diversities of older people and categorized them into online immersers, online amusers, online transitioners, online inhibitors and online non-users. The emergence of the new phase termed as grey transitional phase was also discussed in this study. Moreover, different benefits of the online world social participation including the benefits on the physical world social participation were discussed. Online world social participation helps either by facilitating or compensating or contributing to the physical world social participation. Factors affecting social participation in the online world was discussed in the context of the existing literature. Further in the sections, social connectedness and subjective well-being was discussed. The next chapter concludes this study, explaining the key findings, the limitation of this study, implications for practice, and opportunities for future research.

6 Conclusion

The purpose of this study was to explore the perceptions of older people about their social participation in the online world relative to their social participation in the physical world. Further, the study explored the perception of older people about the social connectedness and subjective well-being they experienced during social participation in the online world. Social participation plays a key role in the overall well-being of older people and is important intervention that helps older people to live an active later life. As old age is often referred to as a period of life-changing events such as retirement, age-related disability, relocation or loss of family and friends, health conditions, and socio-economic status, social participation seems to decrease. However, technological progression in the past few decades have provided a new platform for social participation called the 'online world', along with the physical world social participation.

A gap in the literature was identified regarding the perceptions of older people about their social participation in the online world. Early studies that addressed the perceptions of older people about their online world usage are outdated due to the rapid progression of technology in the past decade. Moreover, there is a swift increase in the number of older people using the online world in the past few years. Therefore, an updated perception of older people is important to evaluate their views and needs in the changing world. Moreover, a gap was identified on social participation of older people using the online world and its effect on their physical world social participation. Few studies investigated this, but the studies were either conducted in a different context (e.g. in a different country) or used quantitative surveys where the perceptions of older people were not taken into account or investigated into special interventions rather than the overall online world usage. The current study therefore offers an insight into the perceptions of older people about their social participation in the online world and its effect on their physical world social participation.

The key finding of this study is that participants perceived the online world as an addition to their lifestyle that is helping them in many ways. Online world activities appeared to be an addition to their physical world activities, and the two were linked

and not seen as separate entities. This study showed the shrinkage in the digital divide and a greater degree of inclusion of older people in the online world. However, there exists notable diversities and some similarities in the participants' usage of the online world activities in this study. Therefore, this study categorized the participants into five groups as online immersers, online amusers, online transitioners, online inhibitors and online non-users, based on their frequency of online world usage, nature of the usage and self-rated skills. These categories highlighted the importance of understanding the diversities of older people and their needs in using the opportunities of the online world. However, it is to be noted that there may be more categories within each of the above categories due to the diversities in individuals.

Moreover, these categories helped to identify the areas that need to be addressed to support the older people's online world usage. The 'grey digital divide' showed shrinkage in this study and was also evident in the recent figures of ONS (ONS 2016). This doesn't imply that more older people are using the online world to their potential. Out of the above categories in this study, online transitioners forms the largest group. They were the beginner or intermediate users who may require some hard work, support and encouragement to sustain their usage. This showed that there emerges a new divide, which was termed as the 'grey transitional phase' in this study, where people from the grey digital divide moved to this early user level where they need considerable hard work and some support to move into the grey digital inclusion phase where people confidently use the online world opportunities. Otherwise, this could result in a reverse phenomenon where they could become an online inhibitor or non-user.

The findings of this study highlighted many benefits of using the online world. The main benefits included reducing social isolation and loneliness, helping to keep the brain active, and helping in social participation in the physical world. The findings showed that online world social participation enabled participants to keep their social contacts with family and friends living in different parts of the world and engaging in different activities in the online world where health conditions restricted their physical world activities, and thereby helping them to mitigate loneliness and

social isolation. Moreover, findings showed that it kept their brain working and also was an entertainment to keep their leisure time occupied. Another key benefit highlighted by the participants was that the online world social participation helped their physical world social participation. The findings demonstrated different ways in which the online world social participation enhances their physical world social participation. It is by facilitating, compensating and contributing to their physical world social activities.

Furthermore, in the study, several factors that affect the online world social participation of older people were identified, which were availability of resources, compatibility, portability, support, skills, perceived need, interest, openness to learning, reluctance to change and security. Most of these factors were identified previously by many other studies. But some have a shift from their focus in this study compared to the time when they were first reported. Availability of resources like devices or broadband was reported before, however, in this study, availability of mobile data instead of home broadband was reported by the participants. Lack of availability of free proper training, especially one-one training, and importance of providing training materials written in an easy to follow and simple language was also identified.

The findings of this study illustrated compatibility issues such as concerns over the automatic updates that led their devices not to be in harmony with the technology, website compatibility in different devices, and the need for using many passwords. The findings showed that different approaches were adopted by the participants to overcome this password issue. However, the participants reported that as there is no common criterion for password entry and it differs for each website, it seems to be incompatible for older people. However, findings showed that participants were more concerned over the inconvenience of remembering passwords than security.

The findings of this study reported the tablet as a very useful and portable device as it is light and easy to carry around. The significance of this finding is that participants reported that they tended to often use the online world with their tablets than other devices. Moreover, in this study, people compared the other devices that they use

and reported the tablet as the most portable and convenient device. Another significant finding of this study is that the participants perceived the portability of Kindle to read books as easy to carry around when they are on holidays and was saving the space in their flats. Findings from this study showed that support from family or friends or other professionals are important for older people to use online world opportunities. However, they prefer support from professionals rather than family members. My study identified that the level of support required varies for older people. The online non-user requires support to get access to the online world, whereas online inhibitors and online transitioners require a higher level of support to continue their use, and online amusers and online immersers rarely require support.

Skills was identified as an important factor that affects the online world social participation. Findings of this study illustrated that even if the participants lack skills, it wasn't a barrier to them as they were willing to learn through experience. The findings of my study illustrated perceived need as an important factor affecting the usage of the online world. Perceived need is important for older people to choose specific activities in the online world. The findings of this study also highlighted interest as an important factor that motivates older people to use the online world and in choosing the type of activities to engage. Moreover, findings from this study informed that older people who are open to learning and accept challenges falls into the online amusers' and online immersers' category, whereas others fall into the online inhibitor or online transitioners' category, and openness to learning affecting their online world social participation.

The findings of this study showed a reluctance to change the way of their communication; they showed reluctance to change the way they do other activities like shop or read books or pay bills or bank, and reluctance to change the device they were using in the past few years. Finally, findings of this study indicated security as an important factor that affects the online world usage of older people. This was mainly due to unawareness of the security features and the real facts, and it restrained many participants in using the opportunities of the online world. Although, participants of this study did not show an overall security fear to use the

online world. However, they were concerned about the security in using some applications and that restricted their usage. Participants also reported the security issues may be in the physical world as well. This supports the key finding of this study where older people perceive online world activities as an addition to their physical world activities, and the two were linked and not seen as separate entities.

This study further explored the social connectedness experienced by older people during their online world social participation. Findings showed that social connectedness was achieved during their social contacts. The online world was reported as an addition to their physical world social contact. Moreover, many online world activities triggered their physical world activities and vice versa, thereby helping them to experience social connectedness in the online world and in the physical world. However, this added connectedness was achieved by social contacts and engaging in other functionalities that either involved the contribution of resources to society or receiving resources from society.

Finally, this study aimed to identify the subjective well-being experienced by older people during their online world social participation. In order to identify the subjective well-being, this study used the conceptual framework developed by Tinkler and Hicks (2011) for measuring the subjective well-being, which are life satisfaction, happiness/anxiety, and overall worthwhileness. The findings from this study showed that older people reported satisfaction and they perceived worthwhileness with their online world usage for social participation. Happiness and anxiety were reported by the participants. However, according to Diener et al. (2002), high subjective well-being is experienced if a person has a high level of life satisfaction, greater positive effects, and little or less negative effect. Therefore, findings highlighted that older people experienced satisfaction, happiness, and Perceived worthwhileness while occasionally facing anxiety and frustration. Hence, the findings point out that the online world social participation has improved their subjective well-being.

All the three research questions were addressed in this study with the findings from this study. The above findings are important because they add to the literature

around the usage of the online world for older people's social participation in the current technology-driven society. As such, it is important to apply these findings in policy and practice, and therefore, in the next sections, the main implications of this study in practice and policy along with the strengths, limitations and the scope of future research are discussed.

6.1 Implications in practice and policy

Rapid progression of technology in the coming years will change the way people communicate, the way services will be delivered, play and entertain. Therefore, it will be important for older people to use the online world to communicate, receive services and information, and engage in different social activities. The findings of this study showed that the online world is integrating into the lifestyles of older people and helping older people to participate in different activities in the online world and the physical world, overcoming their age-related limitations. The findings also demonstrated that older people are diverse and their need for support to use the online world differs. Although, the grey digital divide was reduced in this study, which means a larger number of older people are accessing the online world. This does not imply that they are using the online world to its full potential. Findings demonstrated that policies and programmes need to be implemented, targeting the grey digital transitional phase.

Moreover, this study identified five categories of older online users such as online immersers, online amusers, online transitioners, online inhibitors and online non-users. Online transitioners form the largest group in the study and they are early users of the online world. They need more hard work and support to go online and to be included more in the online world. Therefore, policies should be in place to provide adequate support and training for the online transitioners to confidently use the online world. Moreover, online inhibitors and online non-users require a higher level of support to help them to use the online world. Participants of this study highlighted the importance of having relevant training to use their device and preferred one to one training. However, online immersers and amusers demonstrated more skills to use the online world and therefore, programmes could

be implemented to make use of their skills to train the other categories. Moreover, the participants recommended the need of having a walk-in 'helpdesk' support to solve the issues that they come across in their usage. Policies to implement such services in the libraries or in other public spaces will be useful for older people.

Social isolation and loneliness are main concerns affecting the older population in the UK, and the findings from this study showed that online world social participation can mitigate social isolation and loneliness. Moreover, online world social participation enhanced the physical world social participation, thereby improving their social connectedness and subjective well-being. Furthermore, the findings showed that playing games online helped their brain and kept them entertained and connected. Therefore, policies providing more support and bringing older people to the online world could address some of the issues concerning the well-being of older people. Participants of this study also suggested ways to simplify passwords by making them easier to memorise by following a single criterion for all the websites. This could be addressed at designer levels to make it easier for older people to use the online world opportunities.

6.2 Limitations of this study

This thesis has taken a generic qualitative approach to exploring the online world social participation of older people. As such, the findings of this study will lack generalisability beyond the context of the participants. Moreover, samples used for conducting this study also have implications for the generalisability of the findings. Participants of this study were recruited by Help and Care charity and word of mouth, and therefore all the participants were from Dorset area, making it unrepresentative of other parts of the UK. Although the samples represented younger-old and the oldest-old, no distinction was made between the cohorts. Also, the study did not investigate the differences in gender or socioeconomic background of the participants, which may or may not influence the usage of the online world.

As the word of mouth approach attracted more people who were of a similar background, this may well have added bias to the participant recruitment. Moreover, the study was related to new technologies, therefore it may have attracted people

who used new technologies to take part and so over-represented these older people. Moreover, not being a native English speaker also presented difficulties at times while communicating with participants. However, participants explained to me if I asked for more clarification. Furthermore, during interviews, participants may provide biased data by estimating the background of the researcher and the study.

As generic qualitative research design does not fit to a specific research design, the quality of the study was ensured by applying trustworthiness as a criterion to establish rigor. This includes credibility, transferability, dependability and confirmability. Although saturation was achieved during the collection of data that contributed to the credibility of the study, more data may appear, depending on the demographic area. Moreover, no publications were made so far, which will add to the confirmability of the study. Also, technologies change at a rapid rate and develop quickly, and so findings can be out of date quickly.

Findings of this study demonstrated five categories of online users, depending on their frequency of usage, self-rated skills and nature of the usage. However, as individuals are different, there may be more subcategories within the categories. Moreover, the online inhibitors and online non-users were only one participant each, which was underrepresented. Also, as the study did not intend to categorise participants and the categories emerged during analysis, more opportunities to explore their characteristics was limited. Furthermore, their skills were not measured, and it was the views of the participants that were considered which could be biased. Moreover, as this study collected data at one time point, the switching of participants between the categories were unknown. Therefore, the generalisability of the categories should be done with caution.

When considering the application of the findings of this study, it is important to bear in mind the relative demographic, social, economic and cultural diversity of the population. Despite these limitations of this study, it offers significant value in providing perceptions of older people about their online social participation and insights into the areas that needs to be improved to attract more older people to use or sustain the online world.

6.3 Future Research

As the participants were from the Dorset area, future research could be carried out in other parts of the UK and in youngest-old and oldest-old to identify if any differences exist. As this study collected data once, further longitudinal studies should be carried out to understand the change in the usage of the participants over time. Future studies to explore in detail the categories within the wider population and over a time period would be useful to understand how people switch between the categories over time and the ways they improve/lose their skills. Finally, as technology evolves at a rapid rate, the perceptions also will change and therefore, studies should be carried out in the future to update the literature.

7 References

Abbate, J., 1999. Inventing the Internet. [electronic resource]. MIT Press (Inside technology). Available at: https://search-ebscohost-com.libezproxy.bournemouth.ac.uk/login.aspx?direct=true&db=cat00012a&AN=bourne.555226&site=eds-live&scope=site/ november2018 [Accessed].

Adams, N., Stubbs, D. and Woods, V., 2005. Psychological barriers to Internet usage among older adults in the UK, 3.

Agahi, N., Lennartsson, C., Kåreholt, I. and Shaw, B., 2013. Trajectories of social activities from middle age to old age and late-life disability: a 36-year follow-up. Age and Ageing, (6), 790.

Age UK, 2010. Loneliness and Isolation Evidence Review [Online]. Available at http://www.ageuk.org.uk/professional-resources-home/knowledge-hubevidence-statistics/evidence-reviews/

Age UK, 2017. Later Life in the United Kingdom. [Online]. Available at https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/later_life_uk_factsheet.pdf

Age UK., 2007. Loneliness and Isolation Evidence Review.

Age UK., 2011. Healthy Ageing Evidence Review.

Age UK., 2013. Improving later life. Understanding the oldest old.

Age UK., 2013a. Digital inclusion evidence review.

Age UK., 2013b. Improving later life. Understanding the oldest old.

Age UK., 2017. Later Life in the United Kingdom.

Age UK., 2018. Digital Inclusion Evidence Review 2018.

Ahmed, A. and Tollefsbol, T., 2001. Telomeres and telomerase: basic science implications for aging. Journal Of The American Geriatrics Society, 49 (8), 1105-1109.

Allen, J., 2008. Older People and Wellbeing. Institute for Public Policy Research, London.

Almeida, O. P., Yeap, B. B., Alfonso, H., Hankey, G. J., Flicker, L., Norman, P. E. and Laks, J., 2012. Older Men Who Use Computers Have Lower Risk of Dementia. PLoS ONE, 7 (8), 1-6.

Alzheimers Society., 2011. Short changed: Protecting people with dementia from financial abuse.

Amarshi, F., Artero, L. and Reid, D., 2006. Exploring social and leisure participation among stroke survivors: Part one. International Journal of Therapy & Rehabilitation, 13 (4), 166-170.

Anaby, D., Miller, W. C., Eng, J. J., Jarus, T. and Noreau, L., 2011. Participation and Well-Being among Older Adults Living with Chronic Conditions. Social Indicators Research, 100 (1), 171-183.

Antonio, G., María Paz, R. and Vicente, V., 2015. ICT Learning by Older Adults and Their Attitudes toward Computer Use. Current Gerontology and Geriatrics Research.

Antonucci, T. C. , 1990. Social support and social relationships. In R. H. Binstock & L. K. George (Eds.), Handbook of aging and the social sciences (3rd ed., pp. 205-266). San Diego, CA: Academic Press

Antonucci, T. C., Jackson, J. S. and Biggs, S., 2007. Intergenerational Relations: Theory, Research, and Policy, 679.

Antonucci, T., Birditt, K. S. and Webster, N. J., 2010. Social relations and mortality: A more nuanced approach (5. pp. 649): Sage.

Arenas-Gaitán, J., Peral-Peral, B. and Ramón-Jerónimo, M., 2015. Elderly and internet banking: An application of UTAUT2. Vol. 20.

Arlie Russell, H., 1975. Disengagement Theory: A Critique and Proposal. American Sociological Review, 40 (5), 553.

Ashida, S. and Heaney, C. A., 2008. Differential Associations of Social Support and Social Connectedness With Structural Features of Social Networks and the Health Status of Older Adults, 872.

Ashida, T., Kondo, N. and Kondo, K., 2016. Social participation and the onset of functional disability by socioeconomic status and activity type: The JAGES cohort study. Preventive Medicine, 89, 121-128.

Atchley, R. C., 1972. The social forces in later life.

Atchley, R. C., 1989. A Continuity Theory of normal aging. The Gerontologist, 29 (2), 183-190.

Ballesteros , S., Prieto , A., Mayas , J., Toril , P., Pita , C., Ponce de León, L., Reales , J. and Waterworth, J., 2014. Brain training with non-action video games enhances aspects of cognition in older adults: a randomized controlled trial. Frontiers in Aging Neuroscience, 277.

Banbury, A., Chamberlain, D., Nancarrow, S., Dart, J., Gray, L. and Parkinson, L., 2017. Can videoconferencing affect older people's engagement and perception of their social support in long-term conditions management: a social network analysis from the Telehealth Literacy Project, 938.

Barnard, Y., Bradley, M. D., Hodgson, F. and Lloyd, A. D., 2013. Learning to use new technologies by older adults: Perceived difficulties, experimentation behaviour and usability. Computers in Human Behavior, 29 (4), 1715-1724.

Bartle, R., 2003. Designing Virtual Worlds. New Riders Games.

Baumeister, R. F. and Leary, M. R., 1995. The need to belong: Desire for interpersonal attachments as a fundamental human motivation. Psychological Bulletin, 117 (3), 497-529.

Beard, J. R., Officer, A., de Carvalho, I. A., Sadana, R., Pot, A. M., Michel, J. P., Lloyd-Sherlock, P., Epping-Jordan, J. E., Peeters, G. M. and Mahanani, W. R., 2016. The World report on ageing and health: a policy framework for healthy ageing, 2145.

Beckley, M. N., 2006. Community Participation Following Cerebrovascular Accident: Impact of the Buffering Model of Social Support, 129.

Beland, F., Zunzunegui, M. V., Alvarado, B., Otero, A. and del Ser, T., 2005. Trajectories of Cognitive Decline and Social Relations, P320.

Bell, M., 2008. Toward a Definition of "Virtual Worlds". Journal of Virtual World Research. Vol. 18.

Benjamin, C., Edward, O. L. and Schumm, L. P., 2008. The Social Connectedness of Older Adults: A National Profile. American Sociological Review, 73 (2), 185.

Berg, B. L., 2009. Qualitative research methods for the social sciences .

Berkman, L. F., Glass, T., Brissette, I. and Seeman, T. E., 2000. From social integration to health: Durkheim in the new millennium (NO 6. pp. 843): Pergamon.

Berkman, L. F., Melchior, M., Chastang, J. F., Niedhammer, I., Leclerc, A. and Goldberg, M., 2004. Social Integration and Mortality: A Prospective Study of French Employees of Electricity of France-Gas of France, 167.

Bernard, C. (2007). Real Choice, Real Voice: Older People in Control. Counsel and Care Policy Discussion Paper 2. London: Counsel and Care.

Berry, R., 2011. Older People and Internet. ILC-UK.

Blažun, H., Saranto, K. and Rissanen, S., 2012. Impact of computer training courses on reduction of loneliness of older people in Finland and Slovenia. Computers in Human Behavior, 28 (4), 1202-1212.

Boateng, F. and Quan Liu, Y., 2014. Web 2.0 applications' usage and trends in top US academic libraries. Library Hi Tech, (1), 120.

Bolton, M., 2012. Loneliness: The state we're in. A report of evidence compiled for the Campaign to End Loneliness. Age UK Oxfordshire [Online]. Available at http://www.ageuk.org.uk/brandpartnerglobal/oxfordshirevpp/documents/loneliness%20the%20state% 20we%20are%20in%20-%20report%202013.pdf

Borgonovi, F., 2008. Doing well by doing good The relationship between formal volunteering and self-reported health and happiness. Social Science & Medicine, 66 (11), 2321-2334.

Boudiny, K., 2013. 'Active ageing': from empty rhetoric to effective policy tool. Ageing and society, 33 (6), 1077-1098.

Bowen, G. A., 2008. Naturalistic inquiry and the saturation concept: a research note. Qualitative Research, 8 (1), 137-152.

Bowling, A., 2005. Ageing Well: Quality of Life in Old Age, Maidenhead, UK, Open University Press.

Bowling, A., 2008. Enhancing later life: How older people perceive active ageing?, 293.

Bowling, A., 2009. Research methods in health : investigating health and health services [Non-fiction]. 3rd ed. edition.: McGraw-Hill Open University Press.

Boyatzis, R. E., 1998. Transforming qualitative information: Thematic analysis and code development. Thousand Oaks, CA: Sage Publications, Inc.

Boz, H. and Karatas, S. E., 2015. A Review on Internet Use and Quality of Life of the Elderly. Cypriot Journal of Educational Sciences, 10 (3), 182-191.

Brandtzæg, P. B., Heim, J. and Karahasanović, A., 2011. Understanding the new digital divide—A typology of Internet users in Europe. International Journal of Human - Computer Studies, 69 (3), 123-138.

Braun, V. and Clarke, V., 2006. Using thematic analysis in psychology, 77.

Bryman, A., 2012. Social research methods [Non-fiction]. 4th ed. edition.: Oxford University Press.

Buchman, A. S., Boyle, P. A., Wilson, R. S., Fleischman, D. A., Leurgans, S. and Bennett, D. A., 2009. Association Between Late-Life Social Activity and Motor Decline in Older Adults, 1139.

Bukov, A., Maas, I. and Lampert, T., 2002. Social Participation in Very Old Age: Cross-Sectional and Longitudinal Findings From BASE, P510.

Burmeister, O. K., 2010. Websites for Seniors: Cognitive Accessibility. International Journal of Emerging Technologies & Society, 8 (2), 99-113.

Butler, R. N., and Lewis, M. I., 1982, Aging and Mental Health: Positive Psychosocial and Biomedical Approaches. Toronto: C. V. Mosby Company.

Cachadinha, C., Pedro, J. and Fialho, C., 2011. Social participation of community living older persons: importance, determinants and opportunities.

Caelli, K., Ray, L. and Mill, J., 2003. 'Clear as Mud': Toward Greater Clarity in Generic Qualitative Research. International Journal of Qualitative Methods, 2 (2), 1.

Campbell-Kelly, M. and Garcia-Swartz, D. D., 2013. The history of the internet: the missing narratives, 18.

Campbell-Kelly, M., Aspray, W., Yost, J. R. and Ensmenger, N., 2015. Computer : a history of the information machine [Bibliographies

Carpenter, B. D. and Buday, S., 2007. Computer use among older adults in a naturally occurring retirement community (NO 6. pp. 3012): Elsevier.

Carr, D. C. and Hendricks, J., 2011. Relevance of social capital and lifestyle for the Third Age. In: Carr, D. C. and Komp, K., eds. Gerontology in the era of the Third Age: Implications and next steps. New York, NY: Springer Publishing Company, 207-223.

Carstensen, L. L., Isaacowitz, D. M. and Charles, S. T., 1999. Taking Time Seriously: A Theory of Socioemotional Selectivity, 165.

Cattan, M., White, M., Bond, J. and Learmouth, A., 2005. Preventing social isolation and loneliness among older people: a systematic review of health promotion interventions, 41.

Centre, P. I. R., 2007. Pew Study Finds Few Americans Use Available Technology. Wireless Business Forecast, 3 (10), 1-1.

Chang, J., McAllister, C. and McCaslin, R., 2015. Correlates of, and Barriers to, Internet Use Among Older Adults (1. pp. 66). Great Britain: Taylor & Francis.

Chapman, D. P., & Perry, G. S. 2008. Depression as a major component of public health for older adults. Preventing Chronic Disease, 5(1), 1-9.

Chapman, S. A., 2005. Theorizing about Aging Well: Constructing a Narrative, 9.

Charmaz, K., 2006. Constructing grounded theory : a practical guide through qualitative analysis / Kathy Charmaz [Non-fiction]. London : SAGE, 2006.

Charmaz, K., 2014. Constructing grounded theory [Non-fiction]. Los Angeles : SAGE, [2014]

Chattaraman, V., Wi-Suk, K. and Gilbert, J., 2012. Internet Use and Perceived Impact on Quality of Life among Older Adults: A Phenomenological Investigation. International Journal of Health, Wellness & Society, 2 (3), 1-13.

Chen, G. and Gao, Y., 2013. Changes in Social Participation of Older Adults in Beijing, 15.

Chen, J.-H., Lauderdale, D. S. and Waite, L. J., 2016. Social participation and older adults' sleep. Social Science & Medicine (1982), 149, 164-173.

Chesley, N., & Johnson, B. E. 2014. Information and communication technology use and social connectedness over the life course. Sociology Compass, 8, 589- 602.

Chiao, C., Weng, L.-J. and Botticello, A. L., 2011. Social participation reduces depressive symptoms among older adults: an 18-year longitudinal analysis in Taiwan. BMC Public Health, 11, 292-292.

Choi, M., Kong, S. and Jung, D., 2012. Computer and internet interventions for loneliness and depression in older adults: a meta-analysis. Healthcare Informatics Research, 18 (3), 191-198.

Choi, N. G., DiNitto, D. M. and Eysenbach, G., 2013. Internet Use Among Older Adults Association With Health Needs, Psychological Capital, and Social Capital. Journal of Medical Internet Research, 15 (5), 1-1.

Chopik,, W., 2016. The Benefits of Social Technology Use Among Older Adults Are Mediated by Reduced Loneliness, 551.

Choudhury, N., 2014. World Wide Web and Its Journey from Web 1.0 to Web 4.0. International Journal of Computer Science and Information Technologies, Vol. 5 (6) , 8096-8100.

Choy, L., 2014. The Strengths and Weaknesses of Research Methodology:

Christakis, N. and Fowler, J. H., 2008. Dynamic Spread of Happiness in a Large Social Network: Longitudinal Analysis Over 20 Years in the Framingham Heart Study: British Medical Journal Publishing.

Cockshaw, W. D., Shochet, I. M. and Obst, P. L., 2013. General belongingness, workplace belongingness, and depressive symptoms. Journal of Community & Applied Social Psychology, 23 (3), 240-251.

Cody, M. J., Dunn, D., Hoppin, S. and Wendt, P., 1999. Silver Surfers: Training And Evaluating Internet Use Among Older Adult Learners, 269.

Cohen, L., Manion, L. and Morrison, K., 2007. Research methods in education. [electronic resource] [Bibliographies

Coleman, P. G., 1992. Personal adjustment in late life: Successful aging. Reviews in Clinical Gerontology, 2 (1), 67-78.

Colley, A. and Maltby, J., 2008. Impact of the Internet on our lives: Male and female personal perspectives. Computers in Human Behavior, 24 (5), 2005-2013.

Cooper, S. and Endacott, R., 2007. Generic qualitative research: a design for qualitative research in emergency care?, 816.

Copeland, A. and Shapiro, A. H., 2016. Price Setting and Rapid Technology Adoption: The Case of the PC Industry, 601.

Corbin, J., & Strauss, A. 2007. Basics of qualitative research: Techniques and procedures for developing grounded theory (3rd ed.). Thousand Oaks, CA: Sage

Cornejo, R., Tentori, M. and Favela, J., 2013. Enriching in-person encounters through social media: A study on family connectedness for the elderly. International Journal of Human - Computer Studies, 71 (9), 889-899.

Cotten, S. R., Anderson, W. A. and McCullough, B. M., 2013. Impact of internet use on loneliness and contact with others among older adults: cross-sectional analysis. Journal Of Medical Internet Research, 15 (2), e39-e39.

Cracknell, R., 2010. The ageing population. House of Commons Library Research.

Creswell, J. W., 2014. Research Design: Qualitative, Quantitative and Mixed Methods Approaches (4th ed.). Thousand Oaks, CA: Sage.

Crotty, M., 1998. The foundations of social research : meaning and perspective in the research process [Bibliographies

Crouch, M. and McKenzie, H., 2006. The logic of small samples in interview-based qualitative research, 483.

Crowther, M. R., Parker, M. W., Achenbaum, W. A., Larimore, W. L. and Koenig, H. G., 2002. Rowe and Kahn's Model of Successful Aging Revisited: Positive Spirituality-The Forgotten Factor, 613.

Culley, J. M., Herman, J., Smith, D. and Tavakoli, A., 2013. Effects of Technology and Connectedness on Community-Dwelling Older Adults. Online Journal of Nursing Informatics, 17 (3), 1-6.

Cumming, E., 1963. FURTHER THOUGHTS ON THE THEORY OF DISENGAGEMENT. International Social Science Journal, 15 (3), 377.

Cumming, E., Henry, W. , 1961. Growing Old. Basic Books, New York.

Czaja, S. and Sharit, J., 2013. Designing Training and Instructional Programs for Older Adults. Boca Raton: Taylor & Francis Group.

Czaja, S. J., Charness, N., Fisk, A. D., Hertzog, C., Nair, S. N., Rogers, W. A. and Sharit, J., 2006. Factors Predicting the Use of Technology: Findings From the Center for Research and Education on Aging and Technology Enhancement (CREATE), 333.

Dahan-Oliel, N., Mazer, B., Gélinas, I., Dobbs, B. and Lefebvre, H., 2010. Transportation use in community-dwelling older adults: association with participation and leisure activities. Canadian Journal On Aging = La Revue Canadienne Du Vieillissement, 29 (4), 491-502.

Damant, J., Knapp, M., Freddolino, P. and Lombard, D., 2017. Effects of digital engagement on the quality of life of older people. Health & Social Care in the Community, 25 (6), 1679-1703.

Dartigues, J. F., Foubert-Samier, A., Le Goff, M., Viltard, M., Amieva, H., Orgogozo, J. M., Barberger-Gateau, P. and Helmer, C., 2013. Playing board games, cognitive decline and dementia: a French population-based cohort study. BMJ Open, 3 (8), e002998-e002998.

Davidson, S. and Rossall, P., 2015. Evidence Review: oneliness in Later Life. Age UK.

Denzin, N. K. and Lincoln, Y. S., 2005. Introduction: The Discipline and Practice of Qualitative Research. In: Denzin, N. K. and Lincoln, Y. S., eds. The Sage handbook of qualitative research., 3rd ed. Thousand Oaks, CA: Sage Publications Ltd, 1-32.

Department for Environment, Food and Rural Affairs (Defra), 2011. Survey of public attitudes and behaviours towards the environment [Online]. Available at https://www.compassehub.com/media/ehub/factsheets/later-life-uk-factsheet-1697480357.pdf

Department of Culture, Media and Sport, 2014. Taking Part Survey 2013/14 [Online]. Available at https://www.compassehub.com/media/ehub/factsheets/later-life-uk-factsheet-1697480357.pdf

Department of Health (2006). Our Health, Our Care, Our Say: A New Direction for Community Services. Norwich: TSO.

Desrosiers, J., Noreau, L. and Rochette, A., 2004. Social participation of older adults in Quebec, 406.

Dickinson, A. and Gregor, P., 2006. Computer use has no demonstrated impact on the well-being of older adults. International Journal of Human - Computer Studies, 64 (8), 744-753.

Diener, E. and Biswas-Diener, R., 2002. Will Money Increase Subjective Well-Being?, 119.

Diener, E., 1984. Subjective well-being. Psychological Bulletin, 95 (3), 542-575.

Diener, E., 2000. Subjective well-being: The science of happiness and a proposal for a national index. American Psychologist, 55 (1), 34-43.

Dorin, M., 2007. Online Education of Older Adults and its Relation to Life Satisfaction, 127.

Dörnyei, Z. and Griffee, D. T., 2010. Research Methods in Applied Linguistics. TESOL Journal, 1 (1), 181.

Douglas, H., Georgiou, A. and Westbrook, J., 2017. Social participation as an indicator of successful aging: an overview of concepts and their associations with health, 455.

Eakman, A. M., Carlson, M. E. and Clark, F. A., 2010. The Meaningful Activity Participation Assessment: A Measure of Engagement in Personally Valued Activities, 299.

Easterlin, R. A., Angelescu, L. and Zweig, J. S., 2011. The Impact of Modern Economic Growth on Urban–Rural Differences in Subjective Well-Being. World Development, 39 (12), 2187-2198.

Elaine, C., Lois, R. D., David, S. N. and Isabel, M., 1960. Disengagement-A Tentative Theory of Aging. Sociometry, 23 (1), 23.

Elaine, T. and Peter, C., 2007. Factors Associated with Participation Restriction in Community-Dwelling Adults Aged 50 Years and Over. Quality of Life Research, 16 (7), 1147.

Elisabeth, Z., Laurie, B., Rosemary, A. and Evonne, M., 2012. Mobility and Active Ageing in Suburban Environments: Findings from In-Depth Interviews and Person-Based GPS Tracking. Current Gerontology and Geriatrics Research.

Ellison, N. B., Steinfield, C. and Lampe, C., 2007. The Benefits of Facebook "Friends:" Social Capital and College Students' Use of Online Social Network Sites. Journal of Computer-Mediated Communication, 12 (4), 1143-1168.

Engelhardt H, Buber I, Skirbekkk V, Prskawetz A. Social involvement, behavioural risks and cognitive functioning among older people. Ageing and Society 2010; 30(5): 779-809.

European Commission (EC) (2011) Social Europe: employment and social developments in Europe 2011. European Commission, Brussels.

European Commission.,2007. European i2010 initiative on e-Inclusion - to be part of the information society. Brussels.

Evans, S., 2009. Community and Ageing : Maintaining Quality of Life in Housing with Care Settings. Bristol, UNITED KINGDOM: Policy Press.

Farooq Mubarak, a. and Michael Nycyk, a., 2017. Teaching older people internet skills to minimize grey digital divides : Developed and developing countries in focus. Journal of Information, Communication and Ethics in Society, (2), 165.

Farooq, M., 2015. Towards a renewed understanding of the complex nerves of the digital divide. Journal of Social Inclusion, (1), 71.

Finkelstein, M. A., 2008. VOLUNTEER SATISFACTION AND VOLUNTEER ACTION: A FUNCTIONAL APPROACH. Social Behavior & Personality: an international journal, 36 (1), 9-17.

Fiori, K. L., Antonucci, T. C. and Cortina, K. S., 2006. Social Network Typologies and Mental Health Among Older Adults, P25.

Fiorillo, D., Lavadera, G. L. and Nappo, N., 2017. Social participation and self-rated psychological health: A longitudinal study on BHPS. SSM - Population Health, 3, 266-274.

Fisk, A., Rogers, W., Czaja, S., Charness, N. and Sharit, J., 2009. Designing for Older Adults: Principles and Creative Human Factors.

Foster, L. and Walker, A., 2013. Gender and active ageing in Europe, 3.

Foster, L. and Walker, A., 2015. Active and Successful Aging: A European Policy Perspective, 83.

Foubert-Samier, A., Catheline, G., Amieva, H., Dilharreguy, B., Helmer, C., Allard, M., et al. (2012). Education, occupation, leisure activities, and brain reserve: a population-based study. Neurobiol. Aging 33, 423.e15–423.e25.

Fox, J. H., 1981. Perspectives on the continuity perspective. The International Journal of Aging & Human Development, 14 (2), 97-115.

Fratiglioni, L., Paillard-Borg, S. and Winblad, B., 2004b. An active and socially integrated lifestyle in late life might protect against dementia (pp. 343).

French, A M., and Shim, J. P., 2016. The Digital Revolution: Internet of Things, 5G, and Beyond, Communications of the Association for Information Systems, 38(40) .

Friemel, T. N., 2016. The digital divide has grown old: Determinants of a digital divide among seniors. New Media & Society, 18 (2), 313-331.

Gardner, P., Kamber, T., & Netherland, J. 2012. “Getting Turned On”: Using ICT Training To Promote Active Ageing In New York City. The Journal of Community Informatics, 8(1).

Gaston, S., 2013. The Concept of World from Kant to Derrida. The Rowman & Littlefield Publishing Group Inc.

Gatto, S. and Tak, S., 2008. Computer, Internet, and E-mail Use Among Older Adults: Benefits and Barriers, 800.

Georgieva, L., 2018. Digital Inclusion and the Elderly: The Case of Online Banking. ISINLP2 2018

Gerson, J., Plagnol, A. C. and Corr, P. J., 2016. Subjective well-being and social media use: Do personality traits moderate the impact of social comparison on Facebook? Computers in Human Behavior, 63, 813-822.

Gilmour, H., 2012. Social participation and the health and well-being of Canadian seniors, 23.

Girvan, C., 2013. What is a virtual world? Definition and classification.

Gitlow, L., 2014. Technology Use by Older Adults and Barriers to Using Technology. Physical & Occupational Therapy in Geriatrics, 32 (3), 271-280.

Giuseppe, L., Helena, C., Fabian, C., Rita, C., Ercole, V., Maddalena, I., Przemyslaw, K., Andrea, P., Rute Dinis, S., Leonardo, P. and Maria Cristina, M., 2018. Active Ageing in Europe: Adding Healthy Life to Years. Frontiers in Medicine.

Given, L., 2008. The SAGE Encyclopedia of Qualitative Research Methods.

Gjevjon, E. R., Oderud, T., Wensaas, G. H. and Moen, A., 2014. Toward a Typology of Technology Users: How Older People Experience Technology's Potential for Active Aging (pp. 25): Amsterdam; Ios Press.

Glass, T. A., De Leon, C. F. M., Bassuk, S. S. and Berkman, L. F., 2006. Social Engagement and Depressive Symptoms in Late Life: Longitudinal Findings, 604.

Godfrey, M., Johnson, O., 2009. Digital circles of support: Meeting the information needs of older people. Computers in Human Behavior, 25 (1), pp. 633-642

Goodwin, C. L., 2013. Use of the Computer and the Internet by Well Older Adults, 63.

Goswami, S., Köbler, F., Leimeister, J. M. and Krcmar, H., 2010. Using Online Social Networking to Enhance Social Connectedness and Social Support for the Elderly.

Gov UK., 2013. Helping older and disabled people live at home for longer.

Gov UK., 2015. 2010 to 2015 government policy: older people.

Green, M. and Rossall, P., 2013. Age UK Digital Inclusion Evidence Report 2013. Age UK.

Grier, D. A., 2005. When computers were human [Bibliographies

Grieve, R. and Kemp, N., 2015. Individual differences predicting social connectedness derived from Facebook: Some unexpected findings. Computers in Human Behavior, 51 (Part A), 239-243.

Grieve, R., Indian, M., Witteveen, K., Anne Tolan, G. and Marrington, J., 2013. Face-to-face or Facebook: Can social connectedness be derived online? Computers in Human Behavior, 29, 604-609.

Group, P. R., Dana, A., William, C. M., Janice, J. E., Tal, J. and Luc, N., 2011. Participation and well-Being Among Older Adults Living with Chronic Conditions. Social Indicators Research, 100 (1), 171.

Guba, E. G. and Lincoln, Y. S., 1994. Competing paradigms in qualitative research. In: Denzin, N. K. and Lincoln, Y. S., eds. Handbook of qualitative research. Thousand Oaks, CA: Sage Publications, Inc, 105-117.

Guba, E. G., 1990. The Paradigm dialog [Conference publication] Sage Publications. Available at: https://search-ebscohost-com.libezproxy.bournemouth.ac.uk/login.aspx?direct=true&db=cat00012a&AN=bourne.227019&site=eds-live&scope=site/ november2019 [Accessed]

Haas, B. K., 1999. A Multidisciplinary Concept Analysis of Quality of Life, 728. Easterlin, R. A., Angelescu, L. and Zweig, J. S., 2011b. The Impact of Modern Economic Growth on Urban–Rural Differences in Subjective Well-Being. World Development, 39 (12), 2187-2198.

Hage, E., Wortmann, H., Offenbeek, M. and Boonstra, A., 2016. The dual impact of online communication on older adults' social connectivity. Information Technology & People, (1), 31.

Hagerty, B. M., Lynch-Sauer, J., Patusky, K. and Bouwsema, M., 1993. An emerging theory of human relatedness. IMAGE: Journal of Nursing Scholarship, 25 (4), 291-296.

Harkness, V., Cameron, D., Latter, J., Ravat, M. and Bridges , L., 2012. Preparing for an Ageing Society: Evaluating the Ageing Well programme Parts 1 and 2.

Harper, S., 2006. Ageing societies: myths, challenges and opportunities. New York: Oxford University Press.

Harper, S., Hamblin, K., 2014. International Handbook on Ageing and Public Policy. Chelthanham: Edward Elgar Publishing.

Hart, T. A., Chaparro, B. S. and Halcomb, C. G., 2008. Evaluating websites for older adults: adherence to 'senior-friendly' guidelines and end-user performance, 191.

Hasan, H. and Linger, H., 2016. Enhancing the wellbeing of the elderly: Social use of digital technologies in aged care (11. pp. 749). Great Britain: Taylor & Francis.

Havighurst, R. J., 1961. Successful aging. The Gerontologist, 1, 8-13.

Hawkley, L. C. and Cacioppo, J. T., 2010. Loneliness Matters: A Theoretical and Empirical Review of Consequences and Mechanisms.

Hawkley, L. C., Thisted, R. A., Masi, C. M. and Cacioppo, J. T., 2010. Loneliness Predicts Increased Blood Pressure: 5-Year Cross-Lagged Analyses in Middle-Aged and Older Adults, 132.

Haythornthwaite, C., 2005. Social Networks and Internet Connectivity Effects. Information, Communication & Society, 8 (2), 125-147.

Heddeghem, W., 2014. Evaluating the energy consumption and the energy savings potential in ICT backbone networks.

Heinz M., Martin P., Margrett J. A., Yearns M., Franke W., Yang H.-I. 2013. Perceptions of technology among older adults. J. Gerontol. Nurs. 39, 42–51. 10.3928/00989134-20121204-04

Help and Care Website, 2019. [Online]. Available at https://www.helpandcare.org.uk/

Heo, J., Chun, S., Lee, S., Lee , K. and Kim, J., 2015. Internet Use and Well-Being in Older Adults, 268.

Heo, J., Kim, J. and Won, Y. S., 2011. Exploring the Relationship Between Internet Use and Leisure Satisfaction Among Older Adults, 43.

Hill, R., Betts, L. R. and Gardner, S. E., 2015. Older adults' experiences and perceptions of digital technology: (Dis)empowerment, wellbeing, and inclusion (pp. 415). Great Britain: Elsevier Science B.V., Amsterdam.

Ho, R. C., Zhang, M. W. B., Tsang, T. Y., Toh, A. H., Pan, F., Lu, Y., Cheng, C., Yip, P. S., Lam, L. T., Lai, C.-M., Watanabe, H. and Mak, K.-K., 2014. The association between internet addiction and psychiatric co-morbidity: a meta-analysis. BMC Psychiatry, 14, 183-183.

Hochschild, A. (1975). Disengagement Theory: A Critique and Proposal. American Sociological Review, 40(5), 553-569.

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T. and Stephenson, D., 2015. Loneliness and social isolation as risk factors for mortality: A meta-analytic review. Perspectives on Psychological Science, 10 (2), 227-237.

House of Lords., 2013. Ready for Ageing? London : The Stationery Office Limited.

Hsu, HC., 2007. 'Does social participation by the elderly reduce mortality and cognitive impairment?', Aging & Mental Health, vol. 11 (2), 699–707.

Humphries, R., Thorlby, R., Holder, H., Hall, P. and Charles, A., 2016. Social care for older people: home truths. [electronic material]. https://www.nuffieldtrust.org.uk/research/social-care-for-older-people-home-truths

Hunt, M. R., 2009. Strengths and Challenges in the Use of Interpretive Description: Reflections Arising From a Study of the Moral Experience of Health Professionals in Humanitarian Work, 1284.

Huxhold, O., Miche, M. and Schüz, B., 2014. Benefits of Having Friends in Older Ages: Differential Effects of Informal Social Activities on Well-Being in Middle-Aged and Older Adults, 366.

Ichida, Y., Hirai, H., Kondo, K., Kawachi, I., Takeda, T. and Endo, H., 2013. Does social participation improve self-rated health in the older population? A quasi-experimental intervention study. Social Science & Medicine, 94, 83-90.

Ihm, J. and Hsieh, Y. P., 2015. The implications of information and communication technology use for the social well-being of older adults (10. pp. 1123). Great Britain: Taylor & Francis.

International Longevity Centre UK, 2015. The links between social connections and wellbeing in later life. UCL, London.

Ishii, K., 2015. Mobile Internet Use in Japan: Text-Message Dependency and Social Relationships.

James, B. D., Boyle, P. A., Buchman, A. S. and Bennett, D. A., 2011. Relation of Late-Life Social Activity With Incident Disability Among Community-Dwelling Older Adults, 467.

James, H. F., Nicholas, A. C., Steptoe and Diez, R., 2009. Dynamic Spread of Happiness in a Large Social Network: Longitudinal Analysis of the Framingham Heart Study Social Network. BMJ: British Medical Journal, 338 (7685), 23.

Januva, A. G., S, 2012. Ageing well: an asset based approach. Social Care Institute for Excellence.

Jivraj, S., Nazroo, J. and Barnes, M. 2012. Change in social detachment in older age in England. In Banks, J., Nazroo, J. and Steptoe, A. (eds), The Dynamics of Ageing:

Evidence from the English Longitudinal Study of Ageing 2002–10 (Wave 5). Institute for Fiscal Studies, London, 49–97.

Jivraj, S., Nazroo, J., Vanhoutte, B. and Chandola, T., 2014. Aging and subjective well-being in later life. The Journals Of Gerontology. Series B, Psychological Sciences And Social Sciences, 69 (6), 930-941.

John, W. R. and Robert, L. K., 1987. Human Aging: Usual and Successful. Science, 237 (4811), 143.

Jones, L. and Heley, J., 2016. Practices of Participation and Voluntarism among Older People in Rural Wales: Choice, Obligation and Constraints to Active Ageing. Sociologia Ruralis, 56 (2), 176-196.

Jones, T., Kay, D., Upton, P. and Upton, D., 2013. An Evaluation of Older Adults Use of iPads in Eleven UK Care-Homes, 62.

Jose, P. E., Ryan, N. and Pryor, J., 2012. Does Social Connectedness Promote a Greater Sense of Well-Being in Adolescence Over Time?, 235.

Julien, D., Richard, L., Gauvin, L., Fournier, M., Kestens, Y., Shatenstein, B., Daniel, M., Mercille, G. and Payette, H., 2015. Transit use and walking as potential mediators of the association between accessibility to services and amenities and social participation among urban-dwelling older adults: Insights from the VoisiNuAge study. Journal of Transport & Health, 2 (1), 35-43.

Juliet, C. and Anselm, S., 2008. Basics of Qualitative Research (3rd ed.): Techniques and Procedures for Developing Grounded Theory [authoredbook]. Thousand Oaks, California, United States: SAGE Publications, Inc.

Kalache A. Barreto S. M. Keller I .(2005). Global ageing: The demographic revolution in all cultures and societies. In Johnson M . (Ed.), The Cambridge handbook of age and ageing (pp. 30–47). Cambridge: Cambridge University Press

Kim, J., Lee, H. Y., Christensen, M. C. and Merighi, J. R., 2017. Technology Access and Use, and Their Associations With Social Engagement Among Older Adults: Do

Women and Men Differ? The Journals Of Gerontology. Series B, Psychological Sciences And Social Sciences, 72 (5), 836-845.

Kimiko, T., 2016. Association Between Social Participation and Instrumental Activities of Daily Living Among Community-Dwelling Older Adults. Journal of Epidemiology, (10), 553.

Kimiko, T., Norio, K. and Hiroshi, H., 2017. Positive and negative influences of social participation on physical and mental health among community-dwelling elderly aged 65–70 years: a cross-sectional study in Japan. BMC Geriatrics, (1), 1.

Kimiko, T., Norio, K. and Hiroshi, H., 2017a. Age and gender differences in the association between social participation and instrumental activities of daily living among community-dwelling elderly. BMC Geriatrics, (1), 1.

Kimiko, T., Norio, K. and Hiroshi, H., 2017b. Positive and negative influences of social participation on physical and mental health among community-dwelling elderly aged 65–70 years: a cross-sectional study in Japan. BMC Geriatrics, (1), 1.

Kirk, J. and Miller, M. L., 1986. Reliability and validity in qualitative research. [electronic resource] [Non-fiction Electronic document]. Second Edition. edition.: M.E. Sharpe.

Kleinrock, L., 2010. An early history of the internet. IEEE Communications Magazine.

Kloep, M., Hendry, L., and Saunders, D. (2009) A new perspective on human development. Conference of the International Journal of Arts and Sciences, 1(6), 332–343.

Knox, S. S. and Uvnäs-Moberg, K., 1998. Social isolation and cardiovascular disease: An atherosclerotic pathway? Psychoneuroendocrinology, 23 (8), 877-890.

Kohut, H., Goldberg, A. and Stepansky, P. E., 2013. How does analysis cure? / by Heinz Kohut ; edited by Arnold Goldberg with the collaboration of Paul E. Stepansky [Non-fiction]. Chicago, Ill. : University of Chicago Press ; Bristol : University Presses Marketing [distributor], 2013.

Koopman-Boyden, P. and Waldegrave , C., 2007. Enhancing Wellbeing in an Ageing Society. Population Studies Centre and Family Centre Social Policy Research Unit.

Kudo, S., Mutisya, E. and Nagao, M., 2015. Population Aging: An Emerging Research Agenda for Sustainable Development. Social Sciences, 4 (4), 940-966.

Lansford, J. E., Sherman, A. M. and Antonucci, T. C., 1998. Satisfaction With Social Networks: An Examination of Socioemotional Selectivity Theory Across Cohorts, 544.

LaRocca, M. A. and Scogin, F. R., 2015. The Effect of Social Support on Quality of Life in Older Adults Receiving Cognitive Behavioral Therapy (2. pp. 131). Great Britain: Taylor & Francis.

Larsson, E., Larsson Lund, M. and Nilsson, I., 2017. Developing social contact and participation in social activities: Seniors experiences from a social Internet-based intervention process. Gerontechnology, (2), 101.

Larsson, E., Nilsson, I. and Larsson Lund, M., 2013. Participation in social internet-based activities: Five seniors' intervention processes. Scandinavian Journal of Occupational Therapy, 20 (6), 471-480.

Lee, C. and Coughlin, J. F., 2015. PERSPECTIVE: Older Adults' Adoption of Technology: An Integrated Approach to Identifying Determinants and Barriers. Journal of Product Innovation Management, 32 (5), 747-759.

Lee, G., Lee , J. and Kwon, S., 2011. Use of Social-Networking Sites and Subjective Well-Being: A Study in South Korea, 151.

Lee, H. Y., Jang, S. N., Lee, S., Cho, S. I. and Park, E. O., 2008. The relationship between social participation and self-rated health by sex and age: A cross-sectional survey, 1042.

Lee, R. M. and Robbins, S. B., 1995. Measuring belongingness: The Social Connectedness and the Social Assurance scales. Journal of Counseling Psychology, 42 (2), 232-241.

Lelkes, O., 2013. Happier and less isolated: internet use in old age, 33.

Leone, T. and Hessel, P., 2016. The effect of social participation on the subjective and objective health status of the over-fifties: Evidence from SHARE. Ageing & Society, 36 (5), 968-987.

Levasseur, M. x., Gauvin, L., Richard, L., Kestens, Y., Daniel, M. and Payette, H. x., 2011. Associations Between Perceived Proximity to Neighborhood Resources, Disability, and Social Participation Among Community-Dwelling Older Adults: Results From the VoisiNuAge Study, 1979.

Levasseur, M., Cohen, A. A., Dubois, M.-F., Généreux, M., Richard, L., Therrien, F.-H. and Payette, H., 2015. Environmental Factors Associated With Social Participation of Older Adults Living in Metropolitan, Urban, and Rural Areas: The NuAge Study. American Journal Of Public Health, 105 (8), 1718-1725.

Levasseur, M., Desrosiers, J. and St-Cyr Tribble, D., 2008. Do quality of life, participation and environment of older adults differ according to level of activity? Health And Quality Of Life Outcomes, 6, 30-30.

Levasseur, M., Généreux, M., Bruneau, J.-F., Vanasse, A., Chabot, É., Beaulac, C. and Bédard, M.-M., 2015. Importance of proximity to resources, social support, transportation and neighborhood security for mobility and social participation in older adults: results from a scoping study. BMC Public Health, 15, 503-503.

Levasseur, M., Richard, L., Gauvin, L. and Raymond, E., 2010. Inventory and analysis of definitions of social participation found in the aging literature: Proposed taxonomy of social activities, 2141.

Levasseur, M., Roy, M., Michallet, B., St-Hilaire, F., Maltais, D. and Généreux, M., 2017. Associations Between Resilience, Community Belonging, and Social Participation Among Community-Dwelling Older Adults: Results From the Eastern Townships Population Health Survey (12. pp. 2422). United States: Elsevier Science B.V., Amsterdam.

Lewis, J. P., 2011. Successful Aging Through the eyes of Alaska Native Elders. What It Means to Be an Elder in Bristol Bay, AK, 540.

Lewis, J., 2014. The Role of the Social Engagement in the Definition of Successful Ageing among Alaska Native Elders in Bristol Bay, Alaska, 263.

Li, H., Ji, Y. and Chen, T., 2014. The roles of different sources of social support on emotional well-being among Chinese elderly. Plos One, 9 (3), e90051-e90051.

Li, L., Chang, H.-J., Yeh, H.-I., Hou, C. J.-Y., Tsai, C.-H. and Tsai, J.-P., 2010. Factors Associated With Leisure Participation Among the Elderly Living in Long-term Care Facilities. International Journal of Gerontology, 4 (2), 69-74.

Lian, J.-W. and Yen, D. C., 2014. Online shopping drivers and barriers for older adults: Age and gender differences. Computers in Human Behavior, 37, 133-143.

Lim, J. H., 2011. Qualitative methods in adult development and learning: Theoretical traditions, current practices, and emerging horizons. In: Hoare, C., ed. The Oxford handbook of reciprocal adult development and learning., 2nd ed. New York, NY: Oxford University Press, 39-60.

Lincoln, Y. S. and Guba, E. G., 1985. Naturalistic inquiry [Non-fiction]. Sage.

Lissitsa, S. and Chachashvili-Bolotin, S., 2016. Life satisfaction in the internet age – Changes in the past decade (pp. 197). Great Britain: Elsevier Science B.V., Amsterdam.

Litwin, H. and Stoeckel, K. J., 2014. ENGAGEMENT AND SOCIAL CAPITAL AS ELEMENTS OF ACTIVE AGEING: AN ANALYSIS OF OLDER EUROPEANS. Sociologia e Politiche Sociali, 17 (3), 9.

Llorente-Barroso, C., Viñarás-Abad, M. and Sánchez-Valle, M., 2015. Internet and the Elderly: Enhancing Active Ageing. Mayores e Internet: La Red como fuente de oportunidades para un envejecimiento activo., 23 (45), 29-36.

Longino, C. F., & Cart, C. S. (1982). Explicating activity theory: A formal replication. Journal of Gerontology, 37, 749–760.

Lund, R., Nilsson, C. J. and Avlund, K., 2010. Can the higher risk of disability onset among older people who live alone be alleviated by strong social relations? A longitudinal study of non-disabled men and women. Age & Ageing, 39 (3), 319-326.

Lynne, C. G., Gary, F. V. G., Mary, A. L. and Gary, R. A., 2005. Effect of Social Networks on 10 Year Survival in Very Old Australians: The Australian Longitudinal Study of Aging. Journal of Epidemiology and Community Health (1979-), 59 (7), 574.

M'hiri, K., Costanza, A., Khazaal, Y., Khan, R., Zullino, D., 2015. Problematic Internet use in Older Adults, A Critical Review of the Literature . Journal of Addiction Research

Machielse, A., 2015. The Heterogeneity of Socially Isolated Older Adults: A Social Isolation Typology (4. pp. 338). Great Britain: Taylor & Francis.

Maddox, G. L., 1964. Disengagement theory: A critical evaluation. The Gerontologist, 4 (2, pt. 1), 80-82.

Maier.C, Laumer.S and Eckhardt.A. 2011. Technology Adoption by Elderly People – An Empirical Analysis of Adopters and Non-Adopters of Social Networking Sites Proceedings of the 10th International Conference on Wirtschaftsinformatik 2011, pp. 901-911

Manna, A. A., Sijrike, F. V. d. M., Johan, W. G. and Theo, P. B. M. S., 2012. Determinants of social participation of visually impaired older adults. Quality of Life Research, 21 (1), 87.

Mars, G., Kempen, G., Mesters, I., Proot, I. and van Eijk, J. T., 2008. Characteristics of social participation as defined by older adults with a chronic physical illness, 1298.

Martinson, M. and Berridge, C., 2015. Successful Aging and Its Discontents: A Systematic Review of the Social Gerontology Literature, 58.

Masi, C. M., Chen, H. Y., Hawkley, L. C. and Cacioppo, J. T., 2011. A Meta-Analysis of Interventions to Reduce Loneliness, 219.

Mayoh, J., Todres, L. and Bond, C. S., 2011. Exploring the online health information seeking experiences of older adults. Indo-Pacific Journal of Phenomenology, (2), 1.

McDaniel, S. A. and Zimmer, Z., 2013. Global Ageing in the Twenty-First Century : Challenges, Opportunities and Implications[Book]. Farnham: Ashgate Pub.

McGrath, C. and Astell, A., 2017. The benefits and barriers to technology acquisition: Understanding the decision-making processes of older adults with age-related vision loss (ARVL), 123.

McPhee, J. S., French, D. P., Jackson, D., Nazroo, J., Pendleton, N. and Degens, H., 2016. Physical activity in older age: perspectives for healthy ageing and frailty, 567.

Mead, N., Lester, H., Chew-Graham, C., Gask, L. and Bower, P., 2010. Effects of befriending on depressive symptoms and distress: systematic review and meta-analysis, 96.

Measor, L ., 1985. Interviewing: a Strategy in Qualitative Research in R Burgess (ed) Educational Research: Qualitative Methods. Lewes: Falmer Press.

Medlock, S., Eslami, S., Askari, M., Arts, D. L., Sent, D., de Rooij, S. E. and Abu-Hanna, A., 2015. Health information-seeking behavior of seniors who use the Internet: a survey. Journal Of Medical Internet Research, 17 (1), e10-e10.

Meho, L. I., 2006. E-Mail Interviewing in Qualitative Research: A Methodological Discussion.

Melenhorst, A. S., Rogers, W. A. and Bouwhuis, D. G., 2006. Older Adults' Motivated Choice for Technological Innovation: Evidence for Benefit-Driven Selectivity, 190.

Mertens, D. M., 2010. Transformative Mixed Methods Research. Qualitative Inquiry, 16 (6), 469-474.

Milliken, M., O'Donnell, S., Gibson, K. and B, D., 2012. Older Citizens and Video Communications: A Case Study. The Journal of Community Informatics, 8 (1).

Millward, P., 2003. The 'grey digital divide': perception, exclusion and barriers of access to the Internet for older people. First Monday, 8 (7).

Minocha, S. H., D, 2018. Global Talent Management: An Integrated Approach. London: SAGE Publications Ltd.

Minocha, S., McNulty, C., and Evans, S., 2015. Imparting digital skills to people aged 55 years and over in the UK. The Open University, Milton Keynes, UK. Available at: http://oro.open.ac.uk/44009/

Mitzner, T. L., Boron, J. B., Fausset, C. B., Adams, A. E., Charness, N., Czaja, S. J., Dijkstra, K., Fisk, A. D., Rogers, W. A. and Sharit, J., 2010. Older adults talk technology: Technology usage and attitudes. Computers in Human Behavior, 26 (6), 1710-1721.

Mitzner, T. L., Fausset, C. B., Boron, J. B., Adams, A. E., Dijkstra, K., Lee, C. C., Rogers, W. A. and Fisk, A. D., 2008. Older Adults' Training Preferences for Learning to Use Technology. Proceedings Of The Human Factors And Ergonomics Society ... Annual Meeting. Human Factors And Ergonomics Society. Annual Meeting, 52 (26), 2047-2051.

Mitzner, T. L., Rogers, W. A., Fisk, A. D., Boot, W. R., Charness, N., Czaja, S. J. and Sharit, J., 2016. Predicting older adults' perceptions about a computer system designed for seniors, 271.

Molloy, G. J., McGee, H. M., O'Neill, D. and Conroy, R. M., 2010. Loneliness and emergency and planned hospitalizations in a community sample of older adults. Journal Of The American Geriatrics Society, 58 (8), 1538-1541.

Morris, A. 2007 "E-literacy and the grey digital divide: a review with recommendations" Journal of information literacy, 2 (3), http://jil.lboro.ac.uk/ojs/index.php/JIL/article/view/RA-V1-I3-2007-2.

Morris, M. E., Adair, B., Ozanne, E., Kurowski, W., Miller, K. J., Pearce, A. J., Santamaria, N., Long, M., Ventura, C. and Said, C. M., 2014. Smart technologies to enhance social connectedness in older people who live at home. Australasian Journal on Ageing, 33 (3), 142-152.

Morrow, S. L., 2005. Quality and Trustworthiness in Qualitative Research in Counseling Psychology. Journal of Counseling Psychology, 52 (2), 250-260.

Morrow-Howell, N., Hinterlong, J., Rozario, P. A. and Tang, F., 2003. Effects of volunteering on the well-being of older adults. The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences, 58 (3), S137-S145.

Morrow-Howell, N., Putnam, M., Lee, Y. S., Greenfield, J. C., Inoue, M. and Chen, H., 2014. An Investigation of Activity Profiles of Older Adults, 809.

Motta, M., Bennati, E., Ferlito, L., Malaguarnera, M. and Motta, L., 2005. Successful aging in centenarians: myths and reality,241.

Moustakas, C. E., 1994. Phenomenological research methods. [electronic resource].

Mubarak, F. and Nycyk, M., 2017. Teaching older people internet skills to minimize grey digital divides. Journal of Information, Communication & Ethics in Society, 15 (2), 165.

Müller, M., Fischer, U., Bartoszek, G., Grill, E. and Meyer, G., 2013. Impact of joint contractures on functioning and social participation in older individuals--development of a standard set (JointConFunctionSet): study protocol. BMC Geriatrics, 13, 18-18.

Murayama, Y., Ohba, H., Yasunaga, M., Nonaka, K., Takeuchi, R., Nishi, M., Sakuma, N., Uchida, H., Shinkai, S. and Fujiwara, Y., 2015. The effect of intergenerational programs on the mental health of elderly adults (4. pp. 306). Great Britain: Taylor & Francis.

Nagarkar, A. and Kulkarni, S., 2015. Association Between Social Participation and Self-rated Health Among Older Adults in Pune (Maharashtra). Indian Journal of Gerontology, 29 (4), 432-444.

Namazi, K. H. and McClintic, M., 2003. Computer Use Among Elderly Persons in Long-Term Care Facilities, 535.

Neergaard, M. A., Olesen, F., Andersen, R. S. and Sondergaard, J., 2009. Qualitative description - the poor cousin of health research? BMC Medical Research Methodology, 9, 52-52.

Nef, T., Ganea, R. L., Muri, R. M. and Mosimann, U. P., 2013. Social networking sites and older users - a systematic review, 1041.

Neuman, W. L., 2014. Understanding research [Non-fiction]. First edition. edition.: Pearson.

Newall, N. E., Chipperfield, J. G., Clifton, R. A., Perry, R. P., Swift, A. U. and Ruthig, J. C., 2009. Causal beliefs, social participation, and loneliness among older adults: A longitudinal study, 273.

Nguyena, H., Ishmatovab, D., Tapanainenc, T., Liukkonend, T., Katajapuue, N., Makilad, T. and Luimulae, M., 2017. Impact of Serious Games on Health and Well-being of Elderly: A Systematic

NICE, 2015. Older people: independence and mental wellbeing.

Nicholson, N. R., 2012. A Review of Social Isolation: An Important but Underassessed Condition in Older Adults, 137.

Nie, P., Nimrod, G. and Sousa-Poza, A., 2017. Internet use and subjective well-being in China. Social Indicators Research, 132 (1), 489-516.

Niedzwiedz, C. L., Richardson, E. A., Tunstall, H., Shortt, N. K., Mitchell, R. J. and Pearce, J. R., 2016. The relationship between wealth and loneliness among older people across Europe: Is social participation protective? Preventive Medicine, 91, 24-31.

Nilsson, H., Buiow, P.H., & Kazemi, A., 2015. Mindful sustainable aging: Advancing a comprehensive approach to the challenges and opportunities of old age. Europe's Journal of Psychology, 11(3), 494- 508.

Nimrod, G., 2011. The Fun Culture in Seniors' Online Communities, 226.

Noh, Y.-H. and Yoo, K., 2008. Internet, inequality and growth. Journal of Policy Modeling, 30 (6), 1005-1016.

Novek S, Menec V, Tran T, Bell S. Exploring the Impacts of Senior Centres on Older Adults. Winnipeg, MB: Centre on Aging, May 2013.

Nummela, O., Sulander, T., Rahkonen, O., Karisto, A. and Uutela, A., 2008. Social participation, trust and self-rated health: A study among ageing people in urban, semi-urban and rural settings, 243.

Ofcom, 2012. Communications Market Report. UK.

OFCOM, 2018. Pricing trends for communications services

Office for National Statistics., 2016. Internet access – households and individuals, Great Britain: 2016.

Office for National Statistics., 2018 a. Overview of the UK population: November 2018 [online]. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/overviewoftheukpopulation/november2018 [Accessed]

Office for National Statistics., 2018. Annual Mid-year Population Estimates, 2017.

Office for National Statistics., 2018. Estimates of the very old, including centenarians, UK: 2002 to 2017.

Office for National Statistics., 2018. Living longer: how our population is changing and why it matters. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/ageing/articles/livinglongerhowourpopulationischangingandwhyitmatters/2018-08-13 [Accessed]

Onwuegbuzie, A. J. and Collins, K. M. T., 2007. A Typology of Mixed Methods Sampling Designs in Social Science Research. Qualitative Report, 12 (2), 281-316.

Open Government Licence. Future of an Ageing Population.

Ordonez, T. N., Yassuda, M. S. and Cachioni, M., 2011. Elderly online: Effects of a digital inclusion program in cognitive performance. Archives of Gerontology and Geriatrics, 53 (2), 216-219.

O'Reilly, T., 2007. What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software. Communications & Strategies, (65), 17.

Osmanovic, S. and Pecchioni, L., 2016. Beyond Entertainment: Motivations and Outcomes of Video Game Playing by Older Adults and Their Younger Family Members, 130.

Papageorgiou, N., Marquis, R. and Dare, J., 2016. Identifying the enablers and barriers to community participation amongst older adults, 742.

Paul, S. N. L., Louis, L., Venhwei, L., Chengyu, X. and Tingjun, W., 2011. Internet Communication Versus Face-to-face Interaction in Quality of Life. Social Indicators Research, 100 (3), 375.

Paylor, J., 2011. Volunteering and Health: Evidence of impact and implications for policy and practice. London: Institute for Volunteering Research.

Peek, S. T. M., Wouters, E. J. M., van Hoof, J., Luijkx, K. G., Boeije, H. R. and Vrijhoef, H. J. M., 2014. Factors influencing acceptance of technology for aging in place: A systematic review. International Journal of Medical Informatics, 83 (4), 235-248.

Peplau, L. A., & Perlman, D. (1982). Perspective on loneliness. New York, John Wiley and Sons.

Pew Research Centre., 2012. Older adults and internet use.

Pfeil, U. and Zaphiris, P., 2009. Investigating social network patterns within an empathic online community for older people. Computers in Human Behavior, 25 (5), 1139-1155.

Pfeil, U., Zaphiris, P. and Wilson, S., 2010. The role of message-sequences in the sustainability of an online support community for older people, 336.

Philbin, M., 2014. DIGITAL SKILLS FOR TOMORROW'S WORLD. British Computer Society.

Phillipson, C., 2013. Ageing. Oxford, UNITED KINGDOM: Polity Press.

Pinto, J. M. and Neri, A. L., 2017. Trajectories of social participation in old age: a systematic literature review. 259

Portes, A., 1998. Social Capital: Its Origins and Applications in Modern Sociology, 1.

Prilleltensky, I., 2005. Promoting well-being: Time for a paradigm shift in health and human services1. Scandinavian Journal of Public Health, 33 (s66), 53-60.

Rafnsson, S. B., Shankar, A., & Steptoe, A. (2017). Informal caregiving transitions, subjective well-being and depressed mood: Findings from the English Longitudinal Study of Ageing. Aging & mental health, 21(1), 104–112.

Ramasubramanian, L., 2008. The Digital Revolution. In: Geographic Information Science and Public Participation. Advances in Geographic Information Science. Springer, Berlin, Heidelberg.

Ray, S. a. D., S, 2014. Dementia and cognitive decline A review of the evidence. Age UK.

Raymond, m., Grenier, A. and Hanley, J., 2014. Community Participation of Older Adults with Disabilities, 50.

Raymond, O., 2006. Advantages and Disadvantages of Four Interview Techniques in Qualitative Research. Forum: Qualitative Social Research, (4).

Raymond, O., 2006. Advantages and Disadvantages of Four Interview Techniques in Qualitative Research. Forum: Qualitative Social Research, (4).

Renate M. Kahlke Ba Hon, M. A., 2014. Generic Qualitative Approaches: Pitfalls and Benefits of Methodological Mixology. International Journal of Qualitative Methods.

Renaud, K. and Ramsay, J., 2007. Now what was that password again? A more flexible way of identifying and authenticating our seniors, 309.

Richard, L., Gauvin, L., Kestens, Y., Shatenstein, B., Payette, H., Daniel, M., Moore, S., Levasseur, M. and Mercille, G., 2013. Neighborhood resources and social participation among older adults: Results from the VoisiNuage study. Journal of Aging and Health, 25 (2), 296-318.

Riessman, C. K., 2007. Narrative methods for the human sciences [Bibliographies

Robson, C. 2002. Real World Research: A Resource for Social Scientists and Practitioner-Researchers (2nd ed.). Oxford: Blackwell Publishers Ltd.

Robson, C., 2011. Real world research : a resource for users of social research methods in applied settings [Non-fiction]. Chichester : Wiley, 2011.3rd ed.

Rook, K. S. and Charles, S. T., 2017. Close Social Ties and Health in Later Life: Strengths and Vulnerabilities, 567.

Rosenthal, R., 2008. Older Computer-Literate Women: Their Motivations, Obstacles, and Paths to Success, 610.

Ross, W., George, P., Elaine, T. and Peter, C., 2006. The Prevalence of Person-Perceived Participation Restriction in Community-Dwelling Older Adults. Quality of Life Research, 15 (9), 1471.

Roulston, K., 2010. Considering quality in qualitative interviewing, 199.

Rowe, J. K., R, 1997. Successful Ageing. The Gerontologist 37 (4), 433-440.

Rowe, J. W., & Kahn, R. L. ,1987. Human aging: Usual and successful. Science, 237,143-149.

Rozanova, J., Keating, N. and Eales, J., 2012. Unequal Social Engagement for Older Adults: Constraints on Choice, 25.

Rubio, E., Lazaro, A. and Sanchez-Sanchez, A., 2009. Social participation and independence in activities of daily living: a cross sectional study. BMC Geriatrics, 9 (1), 26.

Russell, C., 2011. Pulling back from the edge: an asset-based approach to ageing well.

Sakakibara, B. M., Miller, W. C., Routhier, F., Backman, C. L. and Eng, J. J., 2014. Association Between Self-efficacy and Participation in Community-Dwelling Manual Wheelchair Users Aged 50 Years or Older. Physical Therapy, 94 (5), 664-674.

Sally, T., Sheryl Reimer, K. and Katherine, O. F.-M., 2004. The Analytic Challenge in Interpretive Description. International Journal of Qualitative Methods.

Salmon, J. P., Dolan, S. M., Drake, R. S., Wilson, G. C., Klein, R. M. and Eskes, G. A., 2017. A survey of video game preferences in adults: Building better games for older adults. Entertainment Computing, 21, 45-64.

Sánchez-Sánchez, A., Lázaro, A. and Rubio, E., 2009. Social participation and independence in activities of daily living: a cross sectional study. BMC Geriatrics, (1), 26.

Sandhu, J. Damodaran, L. and Ramondt, L. 2013. "ICT Skills Acquisition by Older People: Motivations for learning and barriers to progression." International Journal of Education and Ageing. 3 (1).

Sarah, H., 2006. ADDRESSING THE IMPLICATIONS OF GLOBAL AGEING. Journal of Population Research, 23 (2), 205.

Satici, S. A., Uysal, R. and Deniz, M. E., 2016. Linking social connectedness to loneliness: The mediating role of subjective happiness. Personality and Individual Differences, 97, 306-310.

Savikko, N., Routasalo, P., Tilvis, R. and Pitkala, K., 2010. Psychosocial group rehabilitation for lonely older people: favourable processes and mediating factors of the intervention leading to alleviated loneliness, 16.

Sayago, S. and Blat, J., 2011. An ethnographical study of the accessibility barriers in the everyday interactions of older people with the web, 359.

Seals, C., Clanton, K., Agarwal, R., Doswell, F. and Thomas, C., 2008. Lifelong Learning: Becoming Computer Savvy at a Later Age, 1055.

Segrist, K. A., 2004. Attitudes of Older Adults Toward A Computer Training Program, 563.

Seung Hee, L. and Young Bum, K., 2016. Which type of social activities may reduce cognitive decline in the elderly?: a longitudinal population-based study. BMC Geriatrics, 17, 1-9.

Shapira, N., Barak, A. and Gal, I., 2007. Promoting older adults' well-being through Internet training and use. Aging & Mental Health, 11 (5), 477-484.

Siegler, E. L., Lama, S. D., Knight, M. G., Laureano, E. and Reid, M. C., 2015. Community-Based Supports and Services for Older Adults: A Primer for Clinicians. Journal Of Geriatrics, 2015.

Siemon, J. S., Blenkhorn, L., Wilkins, S., O Brien, K. K. and Solomon, P. E., 2013. A grounded theory of social participation among older women living with HIV, 241.

Silva, L. M., Silva, A. O., Tura, L. F. R., Moreira, M. A. S. P., Nogueira, J. A. and Cavalli, S., 2015. Changes and events over life course: a comparative study between groups of older, 3(1).

Silverman, D., 2009. Doing qualitative research : a practical handbook / David Silverman [Non-fiction]. London : SAGE, 2009.3rd ed.

Sinclair, T. J. and Grieve, R., 2017. Facebook as a source of social connectedness in older adults. Computers in Human Behavior, 66, 363-369.

Slegers, K., van Boxtel, M. P. J. and Jolles, J., 2008. Effects of Computer Training and Internet Usage on the Well-Being and Quality of Life of Older Adults: A Randomized, Controlled Study, P176.

Social Exclusion Unit (2006). A Sure Start to Later Life: Ending Inequalities for Older People. Weatherby: ODPM. Social Welfare Policy and Research.

Staley, D. J., 2014. Computers, visualization, and history. [electronic resource] : how new technology will transform our understanding of the past.

Stanley, M., Moyle, W., Ballantyne, A., Jaworski, K., Corlis, M., Oxlade, D., Young, B. 2010. ‘Nowadays you don’t even see your neighbours’: Loneliness in the everyday lives of older Australians. Health and Social Care in the Community, 18, 407-414.

Steptoe, A., Aparna, S., Panayotes, D. and Jane, W., 2013. Social isolation, loneliness, and all-cause mortality in older men and women. Proceedings of the National Academy of Sciences of the United States of America, 110 (15), 5797.

Strawbridge, W. J., Wallhagen, M. I. and Cohen, R. D., 2002. Successful Aging and Well-Being: Self-Rated Compared With Rowe and Kahn, 727.

Stroud, D., 2011. The Importance of Web 2.0 to the 50-Plus. Silver Market Phenomenon, 263.

Sum, S., Mathews, R. M., Hughes, I. and Campbell, A., 2008. Internet Use and Loneliness in Older Adults, 208.

Sum, S., Mathews, R. M., Pourghasem, M. and Hughes, I., 2009. Internet Use as a Predictor of Sense of Community in Older People, 235.

Sundar, V., Brucker, D. L., Pollack, M. A. and Chang, H., 2016. Community and social participation among adults with mobility impairments: A mixed methods study. Disability And Health Journal, 9 (4), 682-691.

Szabo, A., Allen, J., Stephens, C. and Alpass, F., 2019. Longitudinal analysis of the relationship between purposes of Internet use and well-being among older adults. The Gerontologist, 59 (1), 58-68.

Tabet, E., 2016. Activity Participation and Older Adults' Well-Being. SPACE: Student Perspectives About Civic Engagement, 2(1).

Takagi, D., Kondo, K. and Kawachi, I., 2013. Social participation and mental health: moderating effects of gender, social role and rurality.

Takahashi, K., Sase, E., Kato, A., Igari, T., Kikuchi, K. and Jimba, M., 2016. Psychological resilience and active social participation among older adults with incontinence: a qualitative study. Aging & Mental Health, 20 (11), 1167-1173.

Takeuchi, K., Aida, J., Kondo, K. and Osaka, K., 2013. Social participation and dental health status among older Japanese adults: a population-based cross-sectional study. Plos One, 8 (4), e61741-e61741.

Tang, F., Choi, E. and Morrow-Howell, N., 2010. Organizational Support and Volunteering Benefits for Older Adults, 603.

Teherani, A., Martimianakis, T., Stenfors-Hayes, T., Wadhwa, A. and Varpio, L., 2015. Choosing a Qualitative Research Approach. Journal of Graduate Medical Education, 7 (4), 669-670.

The Editors of Encyclopaedia Britannica, 2017. Dorset. Encyclopædia Britannica.]. Available at https://www.britannica.com/place/Dorset-county-England

Tinkler, L. and Hicks, S., 2011. Measuring

Tobin, G. A. and Begley, C. M., 2004. Methodological rigour within a qualitative framework, 388.

Toepoel, V., 2013. Ageing, Leisure, and Social Connectedness: How could Leisure Help Reduce Social Isolation of Older People? Social Indicators Research, 113 (1), 355-372.

Tomaka, J., Thompson, S. and Palacios, R., 2006. The Relation of Social Isolation, Loneliness, and Social Support to Disease Outcomes Among the Elderly, 359.

Toril, P., Reales, J. M. and Ballesteros, S., 2014. Video Game Training Enhances Cognition of Older Adults: A Meta-Analytic Study, 706.

Torp, C., 2015. Challenges of Aging: Pensions, Retirement and Generational Justice.

Torres, A., 2008. Cognitive effects of video games on older people. ICDVRAT/University of Reading, UK.

Townsend, K. C. and McWhirter, B. T., 2005. Connectedness: A Review of the Literature With Implications for Counseling, Assessment, and Research, 191.

Tsai, H. H. and Tsai, Y. F., 2010. Older nursing home residents' experiences with videoconferencing to communicate with family members, 1538.

Tsai, H. H., Tsai, Y. F., Wang, H. H., Chang, Y. C. and Chu, H. H., 2010. Videoconference program enhances social support, loneliness, and depressive status of elderly nursing home residents, 947.

Tsai, H.-y. S., Shillair, R. and Cotten, S. R., 2017. Social support and 'playing around': An examination of how older adults acquire digital literacy with tablet computers. Journal of Applied Gerontology, 36 (1), 29-55.

Turner, P., Turner, S. and Van De Walle, G., 2007. How older people account for their experiences with interactive technology, 287.

Umberson, D. and Montez, J. K., 2010. Social relationships and health: A flashpoint for health policy. Journal of Health and Social Behavior, 51 (1, Suppl), S54-S66.

Unsar, S., Erol, O. and Sut, N., 2016. Social Support and Quality of Life Among Older Adults. International Journal of Caring Sciences, 9 (1), 249-257.

Valtorta, N. and Hanratty, B., 2012. Loneliness, isolation and the health of older adults: do we need a new research agenda?, 518.

Van Bel, D. T., Smolders, K. C. H. J., Ijsselsteijn, W. A. and De Kort, Y. A. W., 2009. Social Connectedness: Concept and Measurement (pp. 67): Amsterdam; Washington, DC; IOS Press; c.

Van Heddeghem, W., Lambert, S., Lannoo, B., Colle, D., Pickavet, M. and Demeester, P., 2014. Trends in worldwide ICT electricity consumption from 2007 to 2012. Computer Communications, 50, 64-76.

Van Ingen, E. and Van Eijck, K., 2009. Leisure and social capital: An analysis of types of company and activities. Leisure Sciences, 31 (2), 192-206.

Vaportzis, E, ., Maria Giatsi, C. and Alan, J. G., 2017. Older Adults Perceptions of Technology and Barriers to Interacting with Tablet Computers: A Focus Group Study. Frontiers in Psychology.

Vaughan, M., LaValley, M. P., AlHeresh, R. and Keysor, J. J., 2016. Which Features of the Environment Impact Community Participation of Older Adults? A Systematic Review and Meta-Analysis. Journal of Aging & Health, 28 (6), 957.

Vera, T., 2013. Ageing, Leisure, and Social Connectedness: How could Leisure Help Reduce Social Isolation of Older People? Social Indicators Research, 113 (1), 355.

Victor, C. R., Scambler, S. J. and Bond, J., 2009. The Social World of Older People: [understanding Loneliness and Social Isolation in Later Life] [Book]. Maidenhead, Eng: McGraw-Hill Education.

Viljanen, A., Törmäkangas, T., Vestergaard, S. and Andersen-Ranberg, K., 2014. Dual sensory loss and social participation in older Europeans, 155.

Vogelsang, E. M., 2016. Older adult social participation and its relationship with health: Rural-urban differences. Health and Place, 42, 111-119.

Wagner, N., Hassanein, K. and Head, M., 2010. Computer use by older adults: A multi-disciplinary review. Computers in Human Behavior, 26 (5), 870-882.

Walker, A. and Maltby, T., 2012. Active ageing: A strategic policy solution to demographic ageing in the European Union, S117.

Walker, A., 2002. A strategy for active ageing, 121.

Walker, A., 2009. Commentary: The Emergence and Application of Active Aging in Europe, 75.

Walker, J. L., 2012. The use of saturation in qualitative research. Canadian Journal Of Cardiovascular Nursing = Journal Canadien En Soins Infirmiers Cardio-Vasculaires, 22 (2), 37-46.

Wells, H. G., 1938. World brain / by H. G. Wells [Non-fiction]. London : Methuen & Co., 1938.

Wenger, G. C. and Davies, R., 1996. Social isolation and loneliness in old age: Review and model refinement. Ageing & Society, 16 (3), 333.

Wessels, B., 2007. Inside the digital revolution. [electronic resource] : policing and changing communication with the public.

WHO, 2002. Active Ageing : A Policy Framework.

WHO, 2015. World report on Ageing And Health.

WHO, 2017. Ten Priorities TOWARDS A DECADE OF HEALTHY AGEING.

Wilkie, R., Peat, G., Thomas, E. and Croft, P., 2007. Factors associated with restricted mobility outside the home in community-dwelling adults ages fifty years and older with knee pain: An example of use of the International Classification of Functioning to investigate participation restriction, 1381.

Wilmoth, J. D., Adams-Price, C. E., Turner, J. J., Blaney, A. D. and Downey, L., 2014. Examining Social Connections as a Link Between Religious Participation and Well-being Among Older Adults, 259.

Windle, K., Francis, K. and Coomber, C., 2011. Preventing loneliness and social isolation: interventions and outcomes. Social Care Institute for Excellence.

Winstead, V., Yost, E. A., Cotten, S. R., Berkowsky, R. W., & Anderson, W. A. {2014). The impact of activity interventions on the well-being of older adults in continuing care communities. The Journal of Applied Gerontology, 33(7), 888-911.

Withington, F. G., 1974. Five generations of computers. Harvard Business Review, 52 (4), 99.

Wolf, T. J., Brey, J. K., Baum, C. and Connor, L. T., 2012. Activity Participation Differences Between Younger and Older Individuals with Stroke, 16.

Wu, Y. H., Damnée, S., Kerhervé, H., Ware, C. and Rigaud, A. S., 2015. Bridging the digital divide in older adults: a study from an initiative to inform older adults about new technologies. Clinical Interventions in Aging, 193.

Xavier, A. J., d'Orsi, E., de Oliveira, C. M., Orrell, M., Demakakos, P., Biddulph, J. P. and Marmot, M. G., 2014. English Longitudinal Study of Aging: Can Internet/E-mail Use Reduce Cognitive Decline?, 1117.

Zaidi, 2008. Features and Challenges of Population Ageing: The European Perspective. European Centre for Social Welfare Policy and Research, Vienna.

Zaidi, A. and Howse, K., 2017. The Policy Discourse of Active Ageing: Some Reflections, 1.

Zaidi, A., 2014. Life Cycle Transitions and Vulnerabilities in Old Age: A Review. UNDP Human Development Report Office.

Zelinski, E. M. and Reyes, R., 2009. Cognitive benefits of computer games for older adults. Gerontechnology, 8 (4), 220-235.

Zettel-Watson, L. and Britton, M., 2008. The Impact of Obesity on the Social Participation of Older Adults, 409.

Zhang, Z. and Zhang, J., 2015. Social Participation and Subjective Well-Being Among Retirees in China. Social Indicators Research, 123 (1), 143-160.

Zheng, R., Spears, J., Luptak, M. and Wilby, F., 2015. Understanding Older Adults' Perceptions of Internet Use: An Exploratory Factor Analysis (7. pp. 504). Great Britain: Taylor & Francis.

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, 1296.

8 Appendices

8.1 Appendix 1: Participant Information Sheet

Invitation

You are most welcome to participate in a research study carried out by Miss Besty Jose, a researcher from Bournemouth University. Before you decide, it is important that you understand why the research is being done and what it will involve. Please take time to read carefully the following information and discuss it with others if you wish. If you need more details or have any questions, please feel free to contact me. You will find my contact details at the end of this information sheet. Thank you for your time reading this.

Title of the research

A qualitative study exploring the perceptions of older people about their social participation in the online world relative to their social participation in the physical world.

Purpose of the study

Participating in social activities is thought to be important for people's wellbeing, however there is concern that as we get older this can become more difficult to do, and some older people can become isolated. The increasing use of the internet and smart phones has created new ways for people to participate in social activities; however we don't know what older people think about this. This study is designed to explore how older people feel about taking part in activities in traditional 'face to face' ways, and in online ways.

Why have I been chosen?

If interested any person fulfilling the following criteria can participate in this research:

- You should be 65 or over
- You should be living in your own home

- You should be taking part in some form of social participation either in the real world or in the online world or both
- You should be able to communicate in English
- You should be able to give consent to take part in the research

Do I have to take part?

It is solely your decision whether to take part in this research or not. If you decide to take part in this research, please keep this information sheet with you. You will be asked to sign a consent form before you start participating in the research. If you decide to take part you are free to withdraw from this research at any time without giving a reason. If you do decide to withdraw you can ask me to destroy any information you have given, which can be done until the information has been anonymised and included in the reports of the research.

What will happen if I decide to take part?

If you decide to take part in the research, I will be contacting you to book an appointment with you for an interview. You can choose either face to face interview or online interview using simple video conferencing program. Face to face interviews can take place at Bournemouth University (at Talbot Campus or the Lansdowne Campus) or another venue if you prefer.

At the beginning of the interview you will be asked a few questions including your name, age, your social connections, how often you participate in social activities and your knowledge of using technology for communication. The data will be stored securely and confidentiality will be strictly maintained for all your information. The interview will be a discussion which lasts no longer than an hour and a half. Both face to face interviews and the online interviews will be audio recorded for analysis. Notes will be taken by the researcher. Once you have completed the interview there will not be any follow up interviews and your participation will be complete.

What are the possible disadvantages and risks of taking part?

Taking part in this research will consume some of your valuable time. Other than this there is no risk or disadvantage identified.

What are the benefits of taking part?

There are no direct benefits for taking part in this research. However, the findings of this study help us to understand the perceptions of older people about their social participation in traditional 'face to face' ways, and in online ways. This will help us to understand how to improve the online participation experience of older people.

Will the information I provide be kept confidential?

All the information that we collect about you during the research will be kept strictly confidential. You will not be able to be identified in any reports or publications.

What will happen to the results of the research study?

The findings will be written up as part of a PhD thesis. It will be also written as a journal for publication in a suitable academic and professional journal.

Who is funding the research?

This research is funded by Bournemouth University.

Who is supervising the researcher?

The Principal Supervisor for this research is: Dr Carol Bond (Principle Academic Digital Health, Faculty of Health and Social Sciences, Bournemouth University).

Contact for further information: If you have any further questions please contact the researcher, Miss Besty Jose on 01202 961318, by email at bjose@bournemouth.ac.uk or write to:

Besty Jose, Faculty of Health and Social Sciences, Bournemouth University, Bournemouth House (B112a), Christchurch Road, Bournemouth, Dorset, BH1 3LT

If you have any complaints about the conduct of the research please contact: Prof Vanora Hundley, Deputy Dean Research and Professional Practice, Royal London House R118, Christchurch Road, Bournemouth University, BH1 3LT, Phone: 01202 965206 or Email at vhundley@bournemouth.ac.uk

Thank you for reading this information sheet.

8.2 Appendix 2: Consent Form

Full title of project:

A qualitative study exploring the perceptions of older people about their social participation in the online world relative to their social participation in the physical world

Name, position and contact details of researcher:

Besty Jose, PhD Student, Faculty of Health and Social Sciences, Bournemouth University, Bournemouth House (B112a), Christchurch Road, Bournemouth, Dorset, BH1 3LT, Phone: 01202 961318, Email : bjose@bournemouth.ac.uk

Name, position and contact details of supervisor (if the researcher is a student):

Dr Carol Bond, Principle Academic Digital Health / Head of Practice Simulation, Faculty of Health and Social Sciences, Bournemouth University, Phone: 01202 961748, Email: cbond@bournemouth.ac.uk

Please Initial Here

I confirm that I have read and understood the participant information sheet for the above research project and have had the opportunity to ask questions.	
I understand that my participation is voluntary and that I am free to withdraw up to the point where the data is anonymised *without* giving reason and without there being any negative consequences. In addition, should I not wish to answer any particular question(s), I am free to decline.	
I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research.	

I agree to take part in the above research project.	

_____ _____ _____

Name of Participant Date Signature

_____ _____ _____

Name of Researcher Date Signature

8.3 Appendix 3: Gatekeeper Information Sheet

Introduction

I would like to request your help and support to recruit interested participants for my research through your organisation/ group (Name of the organisation). I would like to provide you an overview of my research so that you can decide whether my study is something you could assist me for recruiting interested participants. Please take time to read carefully the following information and discuss it with others if you wish. If you need more details or have any questions, please feel free to contact me. You will find my contact details at the end of this information sheet. Thank you for your time reading this.

Title of the research

A qualitative study exploring the perceptions of older people about their social participation in the online world relative to their social participation in the Physical world

Purpose of the study

Participating in social activities is thought to be important for people's wellbeing, however there is concern that as we get older this can become more difficult to do, and some older people can become isolated. The increasing use of the internet and smart phones has created new ways for people to participate in social activities; however we don't know what older people think about this. This study is designed to explore how older people feel about taking part in activities in traditional 'face to face' ways, and in online ways.

Who are the participants for this research?

If interested any person fulfilling the following criteria can participate in this research:

- Age of the participants should be 65 or over
- Participants should be living in their own home independently
- Participants should be taking part in some form of social participation either in the physical world or in the online world or both
- Participants should be able to communicate in English

- Participants should be able to give consent to take part in the research

How the research is conducted?

An interview will be conducted to collect the data for the research. Participants can choose either face to face interview or online interview (using simple video conferencing program).

At the beginning of the interview a few questions will be asked including participant's name, age, social connections, how often they participate in social activities and their knowledge of using technology for communication followed by a discussion about their views of taking part in activities in traditional 'face to face' ways, and in online ways. The data will be stored securely and confidentiality will be strictly maintained for all the information.

The interview will be a discussion which lasts no longer than an hour and a half. Both face to face interviews and the online interviews will be audio recorded for analysis. Notes will be taken by the researcher. Once the interview have completed there will not be any follow up interviews and the participation will be complete.

Where the research is conducted?

Face to face interviews can take place at Bournemouth University (at Talbot Campus or the Lansdowne Campus) or another venue chosen by the participants.

What is your role?

If you think some of your members might be interested in participating in this research, please discuss or circulate the details of the research within your group/organisation. The participants can either contact you or the researcher.

What is the procedure for participating in the research?

The interested participants can contact you or the researcher. The participants will be asked to read the participant information sheet carefully and sign the consent form before

participating in the research. The participants will be contacted by researcher to book an appointment for the interview. The participants have the right to withdraw from the interview at any point and can ask to destroy all the information they provided until the data have been analysed.

What are the possible disadvantages and risks of taking part?

Other than the time taken there is no other risk or disadvantage identified.

What are the benefits of taking part?

The findings of this study help us to understand the perceptions of older people about their social participation in traditional 'face to face' ways, and in online ways. This will help us to develop strategies to improve the online participation experience of older people.

Will the information provided by the participants be kept confidential?

All the information that I collect during the research will be kept strictly confidential. Pseudonyms will be assigned to each data collected to maintain the anonymity of the participants.

What will happen to the results of the research study?

The findings will be written up as part of a PhD thesis. It will be also written as a journal for publication in a suitable academic and professional journal.

Who is funding the research?

This research is funded by Bournemouth University.

Who is supervising the researcher?

The Principal Supervisor for this research is: Dr Carol Bond (Principle Academic Digital Health, Faculty of Health and Social Sciences, Bournemouth University).

Contact for further information: If you have any further questions please contact the researcher, Miss Besty Jose on 01202 961318, by email at bjose@bournemouth.ac.uk or write to:

Besty Jose, Faculty of Health and Social Sciences, Bournemouth University, Bournemouth House (B112a), Christchurch Road, Bournemouth, Dorset, BH1 3LT

If you have any complaints about the conduct of the research please contact: Prof Vanora Hundley, Deputy Dean Research and Professional Practice, Royal London House R118, Christchurch Road, Bournemouth University, BH1 3LT, Phone: 01202 965206 or Email at vhundley@bournemouth.ac.uk

If you think it might be interesting for some of your members please discuss or circulate the attached participant Information sheet within your organisation or group.

Thank you for reading this information sheet.

8.4 Appendix 4: Interview Schedule

Part 1: Introduction

- Self Introduction
- Acknowledgement for their willingness to participate
- Asking questions to make sure they are comfortable and relaxed
- Introducing the steps of the interviews
- Introducing yourself
- Social Participation views
- Social connectedness views
- Subjective well-being views
- Role of internet in social participation
- Explaining the time duration and the flexibility of asking breaks or to repeat the questions
- Explaining the procedures in maintaining the confidentiality and recording of the interview

Part 2: Identity of participants

- Introduce yourself
- How would other people describe you
- About your family and friends (Close or live far)
- Contacts with family and friends
- Participation in social activities
- Internet usage and views on using internet

Part 3: Social participation

3.1: Physical World

- What social activities interest you
- What social activities you do
- How often you participate in those activities
- How long you being participating in those activities
- What you enjoy most/ least about it
- What other activities interests you
- Do you take part in those activities (If not, Why?)
- How well are you connected with the others in the participation group?
- How could you improve the connectedness?
- How much happiness and well-being you experience when participating in the activity
- Would you like to improve your social participation? How/Why?

3.2: Online world

- Do you use internet?
- If Yes

- How often?
- How long you being using it?
- What kind of things you do?
- How did you learn the skills?
- What do you enjoy most/least?

- Do you have online friends or you contact your old friends and family?
- How do you feel about having the online friends?
- What other activities you perform using the internet?
- How do you compare it with the physical world activity?
- How well are you connected using the internet?
- How could you improve the connectedness?
- How much happiness and well-being you experience when participating in the activity using the internet?
- Would you like to improve your social participation using internet? How/Why?
- What are the barriers/ problems encountered while using the internet?
- How did you overcome those barriers/ problems?
- What is the role of internet in your social participation (Both physical and online world)

– If No

- Why?
- Have you ever used it? Why?
- What factor you don't like about internet?
- What do you think about the online activities similar to the activities in the physical world?
- What difference you feel about participating in the online and in the physical world? (social connectedness and subjective well-being)
- Would you like to improve your social participation using internet? How/Why?
- What are the barriers/ problems encountered while using the internet?

- How did you overcome those barriers/ problems?
- What is the role of internet in your social participation in the physical world?

Part 4: Conclusion

- How did you find the interview?
- Do you have any questions about any of the things we talked about?
- Are you feeling concerned in any way about what we talked today?
- Would you like more information about anything that we talked about?
- Do you have any questions about the research project or what will happen to your information?
- Acknowledgment

8.5 BU Ethical Approval

Bournemouth University

Research Ethics Checklist

Reference Id	8570
Status	Approved
Date Approved	12/08/2015

Researcher Details

Name	Besty Jose
School	Health and Social Care
Status	Postgraduate Research (PhD, MPhil, DProf, DEng)
Course	Postgraduate Research
Have you received external funding to support this research project?	No

Project Details

Title	A qualitative study exploring the perceptions of older people about their social participation in the online world relative to their social participation in the physical world
Proposed Start Date	20/01/2014
Proposed End Date	20/01/2017

Summary (including detail on background methodology, sample, outcomes, etc.)
See attached document

External Ethics Review

Does your research require external review through the NHS National Research Ethics Service (NRES) or through another external Ethics Committee?	No