

Silver Surfers, E-government and the Digital Divide: An Exploratory Study of London Local Authority Websites and Older Citizens

Abstract

Governments around the globe are striving to provide e-government, online products and services to all the citizens of their respective countries. This has meant that there is a shift in the conventional mode of public service delivery from a face-to-face and telephone mode to electronic means. However, not all the citizens are making use of these changes and one demographic citizens group that is currently attracting immense interest related to their welfare, health and other such issues is the older people group. Using this as reasoning, the aim of this exploratory and explanatory research is to understand the e-government initiatives in the UK, more specifically London. To conduct this research, a mixed qualitative and quantitative research approach was pursued. It was concluded that the benefits of the Internet to many of the users is relative, depending on the age, perceptions and level of innovativeness of the user. It was learnt that in relation to quality, the local authority websites do contain useful and relevant information for the elderly. However, this information is difficult to access, mainly due to the lack of knowledge, or skills in the use of computers, or Internet. From this research it is expected that a contribution to academia will emerge in the form of a better understanding of issues related to e-government, the digital divide and older citizens. For industry, the contributions of this research is the identification and understanding of issues related with online products and services and the older citizen. For policymakers, this research proffers an understanding of issues related with demand and supply of online products and services that governments are currently providing.

Keywords: Digital Divide, Older People, E-government, Quality, Local Authority Websites

1. Introduction

The United Kingdom (UK) government, like many others globally, have shifted from its conventional mode of public service delivery such as face to face and telephone interactions to a digital mode via the Internet. This was done in order to cease the opportunities that technological innovations have provided the private sector by transforming its structures and services through the use of Information and Communication Technology (ICT), hence giving birth to the e-Government programme.

There are various definitions of e-government used within research, each varied according to the needs of the research studies. For the purposes of this study, the definition being employed is: “*E-Government is the use of information technology, especially telecommunications, to enable and improve the efficiency with which government services and information are provided to citizens, employees, businesses, and government agencies*” [17]. A major aim of this transformational programme was to deliver a high-quality public service that is “*efficient*”, offering the citizens “*choice*” with personalised services designed around their needs not the convenience of the service provider [15].

Every country has a diverse population and not all individuals, or groups of citizens are adopting and using the provided technologies. In the UK, as is the case around the world, of the wider population, a group holding immense concern and attention of present governments is the older population. This is due to advances in living conditions, technologies and lifestyles that people are living longer and

causing increases in the numbers of older people [76]. Contrary to stereotypes of older people being unable to cope with the rapid technological advancements that have occurred over the last 25 years, many seniors have embraced the Internet revolution [104]. Due to the older population group embracing novel technology, older people have been labelled Silver Surfers, a popular description of the confident and competent older ICT user [22]. However, there is a concern that the provided government digital initiatives may exclude “*several segments of the population who are either unable to engage digitally or who struggle to do so*” [59][62]. Of this, the older population was identified as one that is challenging: “*There is a significant challenge to government departments to shift demand to self-serve channels. Evidence cited in this report shows that that many people fail to see the perceived need to use the Internet and to move to using government services online – this attitude is particularly prevalent among older people (see Appendix 2). Where people do have access to the Internet, there is much evidence that use of government services is low and that many prefer to continue to use traditional in-person channels to communicate with government departments*” ([62], page 7).

Thus, this mode of public service delivery may *force* many older adults to either engage with technology or be cut off from the modern society. Elderly citizens are stakeholders in e-Government projects, as they form a majority of the users of public services more than younger adults [78]. Therefore, their needs and expectations should be properly addressed. This is vital for them to gain acceptability and use of the service, thereby ensuring that the full objectives of e-Government is realised and the digital and social gap in society is minimised.

To this end, in the UK, legislation provides for a framework which strives to ensure that websites are accessible to all. Thus, the Equality Act (2010) [36] explicitly mentions websites as providing a public service – and consequently makes it illegal for such a service to discriminate against people with disabilities (note: In this paper, disability is associated with old age on the basis of the following: “Disability in old age is frequent and lowers quality of life, and demands resources for care and rehabilitation” [35]). Additionally, the British Standards Institute has also recently issued the standard BS 8878:2010 Web accessibility code of practice [13], which describes what websites have to achieve in order to meet the requirements of the UK Disability Discrimination Act 1995 [30] (applicable to Northern Ireland only) and the Equality Act (applicable to the rest of the UK) .

It is unsurprising therefore that many studies have been carried out on the elderly and the use of ICT and have presented several social, interactive and task-based benefits [22][50][103][105]. Others have also examined the barriers and factors that influence the use of ICT by older adults [47][66][90][101]. However, minimal research has been carried out on the UK e-government project and its impact on older citizens [67][78]. Moreover, none of these have been from the perspective of the older citizens where e-government projects are evaluated in terms of their efficiency and effectiveness that ensures an older citizens interests or views are represented in these projects.

Accordingly the aim of this exploratory research is to understand the e-government initiatives in the UK, more specifically London. By doing so, both a supply and demand perspective can be provided. The supply focus is offered by establishing whether the developed and implemented websites are usable by the older citizens. The demand aspect by determining whether the online products and services in the form of websites are relevant to the older citizen’s needs a group that is of immense current interest. This will be achieved using appropriate research approaches.

From this research it is expected that a contribution to academia will emerge in the form of a better understanding of issues related to e-government, the digital divide and older citizens. Academia has

addressed issues related to internet use, but more specific aspects have not been identified, which this research intends to address. For industry, the contributions of this research is the identification and understanding of issues related with online products and services and the older citizen. As ageing is currently an issue of immense interest, research such as this should highlight and provide a better understanding for organisations. For policymakers, this research proffers an understanding of issues related with demand and supply of online products and services that governments are currently providing.

To familiarise readers with this paper, an outline is provided. The next section discusses the theoretical foundations surrounding this research. To determine whether the theoretical focus is applicable to real life, a research approach was pursued, which is detailed in the third section. The fourth section then describes and understands the results of this research. A section of recommendations is then provided that then leads to the conclusions of this research.

Theoretical Aspects

2.1. Digital Divide

Technological innovations such as the Internet, have transformed the mainstream activities of people's lives, changing the way people live and work; hence gradually replacing the traditional means of interaction almost to a state of perpetual decline. However, some groups of people and/or countries are marginalised from these benefits and are regarded as being digitally divided or excluded. This research examines the delivery of public services to citizens via the Internet, which is a form of e-government.

Many studies have attempted to define digital divide [9][26][74][93]; however it is generally viewed to be a distinction between those with and without access to the Internet or between the users and non-users of the Internet. Norris et al. [74] further categorised the divide in three levels namely: global, social and democratic divide. Previous research [16][22][78][102][103] has highlighted some of the benefits of the Internet such as the enhancement to lives, convenience, instant access to variety of information, social support, empowerment through online votes and surveys, sharing of opinions using blogs, or financial management. However, it would seem unreasonable to expect the achievement of these benefits, without access to "the source" of the benefit. The emphasis on the Internet accessibility has been a focal point for many studies on digital divide particularly in relation e-Government, where governments are urged to address the issues of inequality in Internet access if the citizens are to obtain the benefits of e-Government [20][62].

Although accessibility is a key issue of the digital divide, it can be argued that having access to the internet alone, cannot deliver the intended benefits if the individual is not computer-literate, or has negative opinions about the Internet. Hence, Van Dijk [97] differentiates four types of access, namely; psychological, material, skills and usage access. The latter type (usage) raises the issue of "usability" which is associated with research on diffusion. However to focus on accessibility and usability factors appears to simplify the issue of the digital divide and may be overlooking other socio-economic factors that create the divide such as income, age, gender, culture, education and disability [32][54][74]. Some of these factors were also highlighted as factors that influence the adoption of technology [29][85][98].

Pick and Azari (2008) highlighted three factors used as a measure for digital divide which are: technology usage, expenditure and infrastructure. They also stressed that using traditional measures

such as accessibility to the Internet, would seem only rational to be used in developed countries where the vast majority of individuals own computers. However this is not the case for poorer countries, where people have little or no access to technology and are not computer literate. They depend on other mediums (e.g. radio stations) indirectly, to tap into the benefits of the Internet. Therefore, it can be inferred from this argument that income and infrastructure are significant factors for digital divide. Cullen [27] identified certain groups of people as disadvantaged by ICT or digitally excluded such as: those with low income or unemployed, as known as low socio-economic status groups (LSG's), low literacy levels, the elderly, people in rural areas, the disabled, and female. When dealing with the digital divide, it is important to identify the context in which these groups are digitally separated. For example, some developing countries, may have a male-oriented perception of ICT such as "Computing are for men", thereby segregating the female and depriving them of the opportunity to educate themselves in ICT. On the other hand, this gender divide in technology may not necessarily be the case in most developed countries. Amongst the disadvantaged groups identities, those commonly highlighted by most studies and reports, as being digitally excluded and less likely to use or engage with the Internet, are the elderly [4][6][38][65][67][90].

Indeed, the digital divide is one of the barriers of Internet usage by the elderly and subsequently, the take-up of the e-Government service as highlighted by the OECD. They stress that the most disadvantaged (i.e. elderly & disabled) have the lowest levels of access, yet often require the highest level of dealings with the government agencies [78]. However, a recent survey by the Office for National Statistics, revealed a growth in accessibility and usage of the Internet by all ages including the elderly [76]. This could be attributed to factors such as free Internet access at local libraries, a need to communicate with families abroad and hobbies e.g. playing bingo or listening to music online [23][52][66]. In the United States of America local libraries have been viewed as critical for governments to engage with citizens. As Jaeger et al. found: "*Public libraries have become the unofficial e-government access facility for those who cannot otherwise reach it*" [10][11]. However, although such actions and measures have been helpful in narrowing the digital gap, the issue of usability still persists.

1.2. Usability and Quality

The majority of the literature agrees that a major issue with the adoption of innovation is the ability to use it [17][29][65]. Usability has been an issue with most Internet-based services and is an important factor for the quality of web-based projects such as e-government; therefore, careful consideration must be given to this.

It has been estimated that ninety per cent of commercial websites have poor usability [73]. It could be argued that this negligence is attributed to more focus on profitability and competition instead of the customer, as previously highlighted by Freeman and Soete [40] in relation to addressing the interests of stakeholders. Government websites, though not-for profit are neither exempt from this problem, as reports have also shown a failure to meet acceptable standards particularly in relation to usability and accessibility [5][7][24].

In computing, the term usability is a recurring term, particularly when considering website development and often used haphazardly. With regards to projects, it signifies quality; ISO 9241 defines Usability as: "*The effectiveness, efficiency and satisfaction with which specified users achieve specified goals in particular environments*" [51]. However, Hertzum [46] argues that usability should not be confined to a specific definition due to its multiple representations that could be based on individual or collaborative use of the system. Therefore, six images of usability have been

highlighted, namely: *universal, situational, perceived, hedonic, organisational* and *cultural* usability. Of these, it is the *universal* image which is most relevant to e-commerce and e-Government [92].

Whilst it is an acceptable argument to have different views of usability, the absence of a standard definition exposes the term to the risk of being used out of context and misunderstood depending on the perception of the audience. According to a position paper of the W3C usability workshop, there is an overlap in the definitions of Usability and Accessibility, as they emphasise the point: “usability helps to ensure accessibility” [100]. Many cognitive or visual accessibility issues relating to the use of the Internet are also usability issues; therefore, they are complimentary.

Moreover, whilst, on the one hand, the mechanisms behind ageing have been understood for quite some while [87], as have design principles for good website usability [71][72][92], considerable challenges still remain when it comes to designing websites for older users. While most points of view center on the fact that the ageing process decreases the sensory, motor and cognitive abilities of individuals and consequently tend to reduce the problem to the more general one of accessibility, nonetheless inclusive website design for older users is a rather more complex issue [57]. Thus, whilst one of the espoused best practices of inclusive design is to involve users at all stages of the design process [69], when it comes down to older users this task could potentially be complicated by issues such as: requirements gathering [34][61][106], access/isolation issues to do with the users themselves, as well as by the lack of technology understanding and confidence in this segment of the population[70]. Additionally, the relative lack of confidence as ageing occurs potentially exacerbates the impact that a single usability problem might have on the older individual’s willingness to engage with a product. Hence, good usability is particularly important for this segment of the population.

In the context of e-Government project aims to allow for better engagement between government and citizens via the Internet [78]. In order to achieve this aim, it would be logical to focus on improving the *quality* of the medium of engagement i.e. the websites by making it more usable by all citizens. Quality is often used loosely to mean luxury or something of premium value, hence can be difficult to express and measure. ISO 8402:1994 defines quality as “*the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs*” [51]. The needs and expectations of customers differ; therefore, it is logical to assume that their perceptions of quality may also be different. Indeed, the literature has highlighted different perspectives of quality which are depicted in Table 1 below.

Insert Table 1 here.

Some authors have categorised these differently as: *Service, User, Content* and *Usability perspectives* [19]. However, regardless of the perspective taken, the final deliverable must “*conform*” to the needs or specifications of the customer or user. That is, the features of the product or service must address the customer’s needs and be suited for the intended purpose [8]. Therefore, this implies that it is crucial to identify the needs, before deciding on the features of the product or service that will support the needs.

The three perspectives shown in Table 1 are relevant to web-based projects such as e-Government, in relation to quality. Therefore, these perspectives have been taken into account in this study, with a focus on service quality because the website is delivering or supporting a service to the customer or user.

2.3. Service Quality

Service quality (SQ) can greatly impact customer satisfaction and can determine whether the customer continues to use a service or not. However, there is difficulty in measuring the quality of a service as it is intangible when compared to a product such as a car, or house. Zeithaml [107], points out that the intangibility makes it challenging to understand the customer's perception of the service and likewise difficult for organisations to evaluate the quality of the services they offer.

Although there are no generally agreed definitions of SQ, some studies agree that it can be conceptualised as a difference between the customer's expectations of the service and the actual performance of the service [45][79][108]. However Cronin and Taylor [25] disagree with this definition and argue that using a gap-based concept is not sufficient, as it poses the difficulty of measuring the varying expectations of customers, hence does not take into account the context or type of service provided. They stress that SQ should be performance based, which can be achieved by evaluating the customers attitude towards the service they receive [25] [95]. Despite this on-going debate it is generally agreed by all these authors that performance is key in determining SQ. Parasuraman et al. [80] (1988) proposed five dimensions for measuring SQ namely: tangibles, reliability, responsibility, assurance, and empathy. These attributes form the basis for the framework commonly used in the measurement of SQ known as SERVQUAL. Other studies have also proposed more dimensions for measuring SQ (Table 2). Many of the studies conducted on SQ are underpinned by the works of Parasuraman et al. [79][80][81] and Cronin and Taylor [25] which are all marketing - based studies and related to SQ in conventional face to face services, rather than electronic- based services.

Insert Table 2 here.

More recently, however, studies have focused on electronic service quality (e-SQ) in industries such as banking, aviation, retail, tourism and Information systems [55][83][96][108]. These studies highlight other dimensions for measuring e-SQ, such as content, layout design, ease of use, easy navigation, and ease of finding information, speed, instructiveness and reliability which are different from those of traditional SQ. These are also associated with Product quality perspective [43]. Although most of these studies were carried out by non-academic researchers, their findings were reinforced by academics who identified similar dimensions for evaluating e-SQ namely: information availability/content [2], ease of use [75], privacy/security [41], graphic style i.e. colour, layout, text size, animations [31]. These studies were all based on e-commerce yet it is relevant to this research because of the similarity in the model of service delivery (i.e. Internet). Hence many of the dimensions identified are applicable to this study with emphasis on content and usability.

Unfortunately, in relation to usability, very little research has been done on the SQ for e-Government [1][14][58]; hence indicating a gap in research which this study aims to offer its contribution. Quality management in e-Government projects cannot be overlooked as this is crucial if good SQ is to be achieved and the customers, satisfied with the outcome of the project. Therefore the process perspective of quality [49][71] is important, which involves quality planning, quality control and continuous quality improvement. This is to ensure that the right quality methods are applied throughout the project lifecycle. The quality of the government websites needs to be tested for compliance to W3C standards, inspected for usability and accessibility [19][42][72]. A quality audit of the project is also required for early identification of issues that impede the project success [84]. Therefore this research also conducts quality audits and control exercise through eliciting of stakeholder's views and quality testing of local authority websites for accessibility.

3. Research Methodology

3.1. Research Approach

This research study is exploratory and explanatory in nature since we are attempting to understand reasons for the slow growth (if any) for e-government amongst older citizens. This also accounts for the reason that a multi-method approach is taken involving quantitative and qualitative studies, from primary research, exploratory studies from peer-reviewed literature and quality testing. This approach has been chosen primarily because these methods are complimentary, but most importantly to obtain the benefits of triangulation where the strengths of each method is capitalised upon. The results obtained from one method, can be used to strengthen the findings of the other, thereby helping to eliminate possible bias from using only one method [12][88].

3.2. Sampling

The research focuses on a sample of thirty local authorities in the London borough i.e. both inner and outer London boroughs. This large sample was chosen in order to provide the opportunity of obtaining a larger number of participants and to minimise possible error in generalising the findings to London, as a population [88]. The participants for the research were obtained from various organisations within the local authorities, some through direct referral from councils, community forums for the elderly, friends, relatives and churches. The decision to source respondents from religious organisations was attributed to the fact that the researcher was a member of the church and shared her research project that resulted in individuals agreeing to participate in the research study. Further, an opportunity was viewed and seized upon as the church members consisted of different age groups, resided in different boroughs and provided a good sample size. Further, since the researcher and individuals all attended the church on specific days and times, the problem of travel, access and ensuring individuals would be available for participation was overcome; hence providing more support for this means of data collection.

Selection of respondents for interviews and focus group was made on the basis of using a stratified random sample based on the age i.e. representing the different age bands, technical competencies (i.e. users and non-users of the service), gender and ethnicity. This was done to obtain a heterogeneous group and to ensure that the sample chosen is more representative of older adults. It also helped to have respondents with a balanced perspective, hence eliminating possible bias. Respondents were not remunerated for participating in the interviews.

3.3. Data Collection

3.3.1. Questionnaires

The questionnaires which were distributed as part of the survey (Appendix A) conducted in our study contained 25 questions, broadly classified into five categories: demographics, Internet use, perceptions of the Internet, use of local authority/council websites, and quality of the local authority/council website.

Three types of questionnaire dissemination channels were selected for this study: namely, postal, Internet and self-administered questionnaires. Reasons for selection included speed, breadth and convenience of data collection. Although the latter type (self-administered) has the disadvantage of being time consuming and exposes the research to possible bias, it was considered to be economical and suitable for many older participants or those educationally challenged due to language barriers. The self-administered questionnaires were carried out by third parties i.e. representative of the respondents such as, family and community engagement officers. This was done to reduce interviewer

bias or any possible influence of the subject and also assisted in protecting the anonymity of a respondent. A telephone questionnaire was also considered due to the convenience factor; however, it was deemed to be expensive and also risks disruption resulting from network failure or poor reception during the course of the conversation.

Overall 700 questionnaires were distributed. Of these, 250 were postal/self-administered and 350 Internet questionnaires within the sample local authorities. The Internet questionnaire was hosted for four weeks, between June-July 2010, using Survey Monkey. The link to the online questionnaire was also sent out by email to a total of 500, which included many individuals, organisations and councils. Since this research study focused on individual users aged 50 years and above, the survey was restricted to people aged 50 years old and above. Survey monkey was chosen as the online survey hosting application due to its popularity, ease of use, flexibility in the design of questionnaire and the capability of providing good a drill down data analysis. An option initially considered for the Internet questionnaire was to host it on a purpose built website; however, this was considered to be more expensive, time consuming to develop and would require a separate analytical tool. Questionnaires were also distributed by post and hand delivered within the sample population to various councils, churches and community forums and individuals.

3.3.2. Interviews

Semi structured interviews were conducted for this research with fourteen participants from both inner- and outer-London boroughs. This type of interview was chosen in order to allow the respondents to freely express their opinion about the subject matter in detail with little guidance from the interviewer. Although an unstructured interview type was initially considered to allow for more depth of discussion, however it required a longer time frame, which was considered unsuitable for the elderly. It also risks the discussion drifting away from the subject matter. Therefore the semi-structured interview was chosen to allow for some degree of order and control by the interviewer.

Insert Table 3 here.

The location for the interviews was determined by the participants and their representatives. i.e. family members and community officers from the council. Most interviews were held at local authority community forums, churches and homes in the case of friends and family. A few were conducted virtually via telephone and emails. This was done for convenience where respondents were unable to attend the interview in person as scheduled. Of the overall fourteen participants (Table 3), eleven were interviewed face to face, one via telephone and two via email.

Most interviews lasted an average of thirty-five minutes. Permission was obtained to record the interviews using a voice recorder, to allow for recollection of the responses and ease of transcription. Coding of interview responses was done according to the scheme detailed in Table 4.

Insert Table 4 here.

3.3.3. Focus group Discussion

This was a quick and convenient way of obtaining data from many respondents simultaneously. It provided the research with a richness of opinions expressed through the experiences of the respondents. A focus group discussion which consisted of five members (Table 5), was held at a church premise. This venue was chosen by the participants because it was a familiar environment

where they felt comfortable. The questions posed were open-ended using a conversational and interactive style and discussion lasted for approximately one and half hours.

Insert Table 5 here.

3.3.4. Website diagnosis (Quality Testing)

An objective evaluation (i.e. testing) of the quality of the council's websites was done by using three widely available web diagnostic tools namely: *Netmechanic*, *Etre* and *Vizcheck*. The three selected and used in order to prevent the formation of a bias opinion when considering website quality. *Netmechanic* [68] is an online tool which, for a given web page, issues a series of statistics and results, regarding estimated loading times, browser compatibility issues, broken links, and incorrect use of HTML tags and/or syntax. *Etre* [37], on the other hand, when given a web page to analyse checks it for conformance to a subset of the Web Accessibility Initiative (WAI) Priorities 1 to 3 guidelines of the W3C, which form the basis of most global legislation relating to accessibility. Lastly, *Vizcheck* [99] is a web-based tool which, given a URL, simulates how people with three different types of colour blind vision (deuteranope, protanope, and tritanope) see the respective web page.

4. Survey Results

A response rate of 26% was received i.e. 179 responses of the 700 questionnaires that were sent using the postal service, hand delivered and online. All 3 modes of delivery were used to ensure the largest numbers of response rates. What was also found is that a greater response rate of 41% (n=103) was received by the postal service and hand delivered questionnaires mode in comparison to the Internet, at 22% (n=76). Although these response rates were within the expected boundaries [56][91], the low number to the online questionnaire employed for this research has an implication suggesting that use of the Internet by older people is still at a low rate. This was also noted within official data statistics Ofcom (2010) had acquired: "*Older consumers spend most of their media and communications time using TV and radio sets, while younger people spend half of their time with computers, mobile phones and handheld devices*" ([76], page 3).

From the replies, 40.8% (n=73) of the total respondents were male and 59.2% (n=106) female. The greater majority of respondents were found to be White British, 55.6% (n=99) and people of Asian origin, 22.5% in total (n=40). Further demographic information on the survey sample is proffered in Table 6 below.

Insert Table 6 here.

4.1. Internet Use

This study focuses on e-government initiatives involving the use of local authority websites for public service delivery via the Internet. Therefore, respondents were questioned on their use of the Internet. This was done to establish how many older people use computers and the Internet, the purpose and frequency for use and impeding disabilities. This section of the survey was answered by 95% (170) of the respondents.

The results (Q6) showed that a majority of the respondents had either little knowledge or experience i.e. 34.1% (n=58) or were highly experienced users 34.7% (n=59). However, a significant number of respondents, 28.2% (n=48) had a complete lack of knowledge in computing. This group were found to

be much older, between the age bands of 65 – 74 years (n=16), and 75 years and above (n=22). They were also mostly female, 68.8% (22 of the 48 respondents) of Asian and British origin, with no educational background 66.7 % (i.e. 32 of the 48). This finding agrees with the latest report of the ONS [76].

From the results (Q7), Internet access did not appear to be a problem. The majority of the replies (79.4%, n=135) admitted having access, mostly at home whilst others had access both at home and at work (Q8). However, a few respondents (9.4%, n=13) relied on free Internet access available at public places such as the local library. The frequency of Internet use is illustrated in Figure 1.

Insert Figure 1 here.

Most respondents (54.7%, n=93) were daily users of the Internet and aged between 50-54 and 55-64 years old. Of these, 53 were employed with educational levels ranging between secondary school and postgraduate, a result which reinforces and concurs with the findings of Choudrie et al. [20] in relation to the profile of older broadband users.

On the other hand, it was found that despite having access to the Internet, 28.8% (n=49) of respondents never use it (Q9). The majority of these respondents were already retired (65.3%, n=32), or unemployed (30.6%, n=15), and/or with no education (65.3%, n=32). This point agrees with Van Dijk and Hacker [97], who indicated this type of accessibility as being a “material access” to the Internet rather than a “mental” or “skills access”.

Generally, the above findings on the use of the Internet align with other studies from the literature [26][32][54][74], which emphasise age, gender, income, culture and unemployment, as social-economic factors that create a digital divide. To establish their information needs, respondents were asked to indicate their purpose for using the Internet (Q10). The most important three according to the weighting of responses were **communication**, **leisure** and **work** (Table 7), with banking and shopping also being highlighted as popular Internet activities among the older generation. This could suggest that the barriers of security and privacy that inhibits the adoption of electronic services via the Internet, as highlighted by [33][44][89], are gradually being overcome.

In relation to the disabilities that impede the use of the Internet by the older adults, the question (Q11) was only answered by 164 of the total respondents. The greater majority, 73.8% (n=121) had no disabilities. However, the most commonly highlighted disabilities were those affecting the hands e.g. arthritis/motor disability suffered by 14% (n=23) and visual impairments 6% (n=10). The former, i.e. arthritis, was mostly experienced by respondents in the age band 65 – 74 years and 75 years above. The disability least encountered, indicated by only four respondents, was dyslexia. This result was not surprising as many people do not tend to admit or are unaware that they possess this disability; hence this should not be overlooked.

Insert Table 7 here.

4.2. Perceptions of the Internet

An individual’s perception of the usefulness of a technology and its ease of use tends to influence their mind set or attitude towards the technology and subsequently its use [29]. Therefore it was important to capture the respondents’ perceptions of the Internet.

Respondents were asked to indicate their agreement or disagreement with the views about the Internet using a five point Likert rated scale (Q12). These views were based on twelve items gathered from the

literature [16][22][102][103] on the benefits of the Internet. This question was answered by all 170 respondents. The results (Table 8) show that the majority strongly perceived the Internet to be useful, relevant, convenient and informative. However, in some cases more than 50% i.e. 85 to 92 respondents remained unconvinced about the reliability, empowerment, affordability, speed, ease of use, trendiness and the adaptability of the Internet to varying lifestyles, hence they took a neutral stand. These respondents were mostly within the age band of 55 years and above, including both users 64.7% (n=55) and non-users 35.3% (n=30) of the Internet. These findings do not fully align with the views of most of the authors above as it appears that the benefits of the Internet to many is relative, depending on the age, perceptions and level of innovativeness of the user as highlighted by [29][64][85].

Insert Table 8 here.

4.3. Use of Local Authority Websites

A crucial aspect of the survey focused on the quality of the local authority websites, which was determined by eliciting the views of the respondents in relation to the usefulness of the website and its usability. It was also important to establish the barriers that existed for older people when taking up an online service. There was variability in the number of responses to the questions in this section of the survey. This ranged between 47.7% (n=81) and 96.5% (n=164) of the total respondents. This was as a result of some conditional questions that were restricted to respondents who had visited/used their local authority websites.

When questioned on the preferred method of interaction with the council (Q13), the resounding response by the majority were telephone services, 66.5% (n=109) and face to face contact, 41.5% (n=68) - see Figure 2. This response demonstrates the need for personal attention or personalisation, which is one of the attributes, for measuring good service quality (SQ) highlighted by [48][55].

Insert Figure 2 here.

It was found that the majority of people who indicated a preference for face to face contact were respondents within the older age bands of 65 years and above, who were retired, with no educational background. On the contrary, the younger age bands of 50 – 64 years preferred to use the telephone service. The results also revealed that almost all respondents of Asian origin i.e. 38 out of the 40 who participated in the survey indicated a preference for face to face communication. This could be as a result of language barriers and the need to seek assistance with translation.

There were a few other respondents 13.4% (n=22) and 15.2% (n=25) who respectively indicated the use of the council websites and email as their preferred mode of communication or interacting with their council. These respondents were found to be of a younger age band, i.e. 50 – 64 years, employed and educated up to college level. This result suggests a correlation between education, employment and the use of the Internet since internet use could be a requirement for their jobs.

Just over half 50.6 % (n=83 out of n=164) of respondents to this section of the questionnaire had visited their local council's website (Q14). Of these, 68.7% (n = 57) actually knew the council's Uniform Resource Locator (i.e. Internet address), with the majority (80.7%, n=67) confessing to only occasionally visiting their local council's website (Q17 and Q18, respectively). The most common purpose (Q15) cited for the visit was to search for information or contact numbers for council services such as bin collection and planning application services (Figure 3).

Insert Figure 3 here

Of the 83 users who had visited the council's website, a vast majority (83.1%, n=69) found the website useful for the intended purpose. However, in response to Q16 of the questionnaire, a few commented that there was a challenge in finding the required information.

"It can be laborious to establish if there is any useful information on the site"

"Once discovering what heading the information was under the site was useful, but it is time wasting".

The 81 respondents who were non-users of the council's websites were questioned (Q19) about the factors that discourage usage of the website. The three most important factors identified, were the *preference for personal contact, lack of computer literacy and the lack of accountability* (see Table 9). Another important factor with the fourth highest weighting as shown in the result table below is the difficulty of finding information on the websites. This is reinforced by the comments highlighted above, as well as by the fact that 84 out of 161 people who answered Q20 indicated that they felt that the council's websites do not improve people's communication with them.

Insert Table 9 here.

Respondents were also required to rate the frequency of use of some of the services or information available on their council's website on a four point scale (Q21). The larger majority i.e. 64.6% (n=106) of the total respondents (n=164), who answered this question, indicated that they never required the use of the service. Of these, 58.5% (n=62) of were from the younger age bands of 50 – 55 years and 55 – 64 years, with almost half of them, i.e. 47.3% (n=50), employed. Of the 58 respondents who indicated that they did use services, the most common ones were transport and streets (e.g. obtaining/renewal of bus pass, bin collection), housing, health and social care, advice and housing benefits, which was in line with the findings of the NAO report [67]. These identified services were mostly used by people (n=41) of older age bands i.e. 65 years and above, who are unemployed or retired. This result could imply that most public services offered on a local government level are most relevant to much older adults or the unemployed, or retired.

An open ended question (Q22) was asked to establish the specific needs and expectations of the citizens, other than those currently offered by the council. This question was only answered by 81 people and the majority i.e. 56% (n=45) were unsure about a specific need. However a range of other needs were expressed by the others (see Table 10). The mostly popular needs were for translation (n=9) and information on computer training centres for the elderly (n=7), with the former (i.e. translation) found to be a response provided by Asian and other ethnic origins citizens. The majority of replies to this question stressed that the provision of public services online was unsuitable for the elderly.

Insert Table 10 here.

The variation in the needs expressed by the respondents reinforces the challenge of managing stakeholder needs, particularly with ICT projects and agrees with the views of [18][39].

4.4. Quality

Respondents were required to evaluate the quality of their council's website by rating the information content (Q23) and usability (Q24) issues in terms of 14 items on a five point Likert scale. The items

represented five factors for content (Table 11) and nine for usability (Table 12) which were obtained from the usability and service quality literature [29][72][108].

This part of the questionnaire was answered by 164 respondents. An option to indicate ‘non-applicable’ was given, especially bearing in mind the non-users of the Internet or non-visitors to the council websites. Roughly half of the respondents 52% (n=85 of 164) were unable to evaluate the quality as a result of their lack of use of the website and indicated the option non-applicable. The remaining respondents gave an average rating in relation to both content and usability. It can be seen in Tables 11 and 12 that, whereas the mean opinion scores for the respective items hover around the mid-point (3) of the scale, thus giving an overall impression of neutrality in the participants’ responses, only in two instances (pertaining to the websites’ ability to provide complete information and their download times) do these perceptions display a negative tendency, i.e. an overall mean below the value of 3. Indeed, the message that seems to be conveyed here is one of unconvinced satisfaction.

Insert Table 11 here.

Insert Table 12 here.

The last question of the survey asked citizens to state their overall satisfaction with the quality of their local authority’s website. The same pattern that emerged before manifests itself here (Figure 4): again, although most respondents 60.3% (n=99 of 164) selected the neutral option, the overall mean (3.32) nonetheless indicates a slight positive trend, as evidenced by the fact that the number of people who were positive towards the website quality is overwhelmingly larger than those who displayed a negative disposition (51 vs. 14). Moreover, this unconvinced satisfaction again present in the results of our survey, could be responsible for the low take-up of the service and is in agreement with Baroudi et al. [3], who established a correlation between user satisfaction and the use of technology. The items commonly rated as very poor in relation to content and usability were the inability of the websites to provide complete information and the ease of finding information. The latter appears to be a resonant issue from this survey in relation to using local authority websites.

Insert Figure 4 here

5. Interviews and Focus Group Results

Interviews and focus group discussions were conducted to explore the needs and expectations of the older citizens in relation to the electronic public service delivery of local authorities. The findings and discussions have been categorised into themes relevant to our research aim (Table 13).

Insert Table 13 here.

5.1. Perceptions of the Internet

All interviewed respondents were questioned about their views of the Internet and the three most important views agreed by the majority of respondents were that the Internet is *informative*, *convenient* and *useful* (Table 14). A point made by a couple of respondents, although regarded as less important, was the benefit of ‘*choice*’ offered online. This point highlights one of the objectives of the e-government project, which is to provide a service that gives citizen’s choice [15].

Insert Table 14 here.

Notwithstanding the benefits expressed, there were some discussed negative views and issues. The most common was the unreliability of information, security threats, unwanted information and junk mails, addiction to the Internet, damaging to health e.g. eyesight and ergonomic problems such as neck pain. Some respondents expressed these points as quoted:

“The Internet is easy access to a lot of unwanted information; I think the user needs to know exactly what he/she requires in order to be able to gain something valuable from the Internet” (male, 51 yrs, user)

“...I see many people who are addicted and controlled by the Internet, especially younger people like my grandchildren. They spend so many hours on the computers and the long time they spend steering at the screen can be very bad for the eyes” (male, 66yrs, non-user).

“..... there are a lot of junk mails received which contain viruses and damage your computer, not to talk about the Internet fraud which is on the increase, so one needs to be very careful when using it” (male, 78yrs, user).

Moreover, many respondents particularly emphasised the need for caution when using the Internet. An interview respondent was quoted as saying:

“One needs to be careful with the internet. It just like a car, it depends on what you use it for. You blame or praise the driver for the level of driving, not the car” (male, 53yrs, user).

The focus group members reiterated the main thrust of the views expressed above by the interviewed group, emphasising that the responsibility of effectively using the Internet rests on the user and provided verification and validation to the interview results. However, this statement suggests a large and unwanted responsibility for older people, who have limited knowledge, of how to identify threats or to safe-guard their use of the Internet and therefore, could fall victim to cyber criminals or intruders. The issue of security was identified as one of the barriers that discourage older people in this modern age from using the Internet.

5.2. Access and Use of the Internet

When questioned on the accessibility and affordability of the Internet, it was found that access to the Internet was not a problem, as the majority of interviewed respondents had Internet access at home (10 out of 14 users). However, it was observed that two of the respondents with Internet home access nonetheless described themselves as non-users of computers/Internet. This agrees with findings from the literature [20][97] which highlight that people may have the material access to the Internet, but not necessarily the skill or mental access. This therefore indicates that it is the lack of knowledge and skills of using the infrastructure (i.e. computers/Internet) which is the major factor that creates the digital gap in the society and likewise, influences the adoption of new technology, and is reinforced by [93].

Despite many respondents having access to the Internet, opinions were generally divided on whether or not that access is affordable for older people. Those who disagreed were mostly older respondents aged between 66- 80 years, and regarded personal access to computer and the Internet as a financial strain for the elderly:

“Although I can afford to have a computer and Internet access, because I had a good job prior to my retirement..... I receive a very decent pension but for many elderly retired people living on their own, who are barely managing to live on their pension and have to depend on the government to sustain them through benefits; I think affording computers and Internet at home is an expensive luxury” (male, 78yrs, user)

Other respondents, though, were of the opinion that the Internet was affordable. These were found to be those of younger age bands (i.e. 51 – 63years), who were mostly employed and skilled users of the Internet. This finding therefore mostly agrees with that of Cullen [27], who highlighted people with low income or unemployed as being digitally excluded.

Interestingly, it was also observed from the interviews and focus group, that there were a few older respondents of ages 70 and 78 years old, who described themselves as skilled and regular users of the Internet. Therefore this could suggest a contextual and updated review of the findings of Cullen [27] in relation to age as a factor of digital divide. In fact, when posed with a question to sample their opinion on older people being digitally divided, respondent C of the focus group, was quoted as saying:

“I don’t think that the separation is necessary a factor of the age, but rather between those who use and those who don’t not use the Internet/computer because some young people believe it or not, are also digitally divided” (male, 70yrs, skilled User).

Most respondents agreed with the view above whilst some stressed the point that the digital separation marginalises older people, hence making them lose out on many benefits such as online discounts and even employment. A focus group respondent, who was not very skilled in computing elaborated on the latter (employment) by saying:

“....I am currently unemployed and a lot of the sales jobs I applied for necessitate the use of the Internet, so I am at a loss because my knowledge and skill is extremely limited” (male, 51 yrs, non-user).

For the 8 interviewed respondents who were users of the Internet, the most important three reasons for using the Internet were for work, leisure, communication and general surfing. Although regarded as a less important point, some respondents from both Interviews and focus group admitted using the Internet for banking and social networking, which is a trend of Internet activities common today amongst younger people. This could imply that older people are becoming more innovative.

Respondents (i.e. users) regarded the Internet as an essential tool for their daily lives, as some required it for their jobs. In contrast, non-users, though admitting the usefulness of the Internet, did not consider it to be of any significance to them and were quoted as saying:

“I am not computer literate so it is useless to me; I carry on my life the way I have always done,..... so the Internet is only useful for those who can use it” (female, 70yrs, non-user).

“My husband and I both retired before computers came into use and was introduced into our employment.....so we have been sufficiently active and living our lives well enough not to feel any need to use it” (female 80yrs, non-user).

“...Okay I have heard about how useful and convenient the Internet can be....., I do not need computers or the Internet at all.....My social life is built around doing things

in the community such as bowling, dancing, going to the pub and the Bingo so I don't need anything that will change the way I have been living my life for years" (male 66yrs, non-user).

The above comments validate Davis's [29] Technology Acceptance Model which demonstrates that the perceived usefulness of a system influences a person's attitude towards the full adoption of the new system. This resistance to changing established patterns of life as reflected from the third comment agrees with the views of Brown [10], who highlighted that disruptive innovation to established patterns of life has a high probability of resistance. The above comments could imply that many older people feel comfortable with their norms of life and are reluctant to change as they don't see any use or value of the Internet to their lives.

5.3. Barriers of Internet Use by Older People

The most important barriers identified from the interviews were, lack of knowledge/skills, disability, security, lack of infrastructure i.e. computers and fear of technology (technophobia) - see Table 15. Focus group members also agreed on these points with emphasis on the lack of knowledge/skills and lack of computer ownership, which aligns with the views of Pick and Azari [82], as one of the measures of digital divide. The results from the survey in relation to barriers of using the local authority websites also reinforces this finding, as most non-users indicated the lack of computer literacy as a barrier.

The issue of technophobia was also expressed by several interview and focus group respondents. One of the respondents explained this further by stating:

"..... they are also afraid of pressing something wrong and breaking the computer, someone like me that's my main problem as computers have now become much more complex compared to those days" (male, 66yrs, non-user).

This point agrees with the findings of [22][65][66], as one of the perceived barriers for older people using the Internet. An interviewed respondent summarised the barriers of the Internet through this statement:

"A lot of older people have disabilities which makes the Internet not easily adaptable to their lives. Another thing is the wrong mindset that the internet is bad with lots of fraudulent things happening on it, because they hear a lot on the news; therefore this makes them very fearful.....most importantly for the old people who have the will to learn to use it, they may not be able to afford computers and moreover, will require someone to teach and support them" (male, 63yrs, user).

One of the barriers identified was the language barrier. This was highlighted by a few respondents, one of Asian origin, who emphasised the point by saying:

"...Many older Asian people in their late 60s and above who immigrated to Britain are not educated, neither can they speak English, therefore using the Internet is useless to them because they cannot understand..... they will still require help with translating the information contained on the website" (female, 65 yrs, user).

Translation was a need also identified by survey respondents of Asian and other ethnic origins. This point aligns with the view of Hertzum (2010), who highlighted culture, as one of the multi-images of usability that must be taken into consideration to achieve universal acceptability.

The focus group members were divided on this point (i.e. translation), as one of respondents (A) disagreed by stressing that it was the responsibility of all British nationals, to learn English, citing example with countries like France. However, another (E) pointed out the need for compliance to the legislation of equality and diversity. Although each of these arguments appeared to be valid, it highlighted the need to empathise with all users of services regardless of age and culture. The factor of empathy in service delivery, agrees with the view of Parasuraman et al. [80][81], who identified this as a key dimension for measuring for good SQ. Nonetheless, it can be argued that translation will be a challenge because of the large numbers of ethnic groups and nationalities, represented within each local authority and Britain as a whole. However, this is one of the challenges of managing stakeholder, particularly with IT project and this will need to be addressed in the best logical and possible way.

6. E-government Websites' Diagnosis

Whilst the previous questionnaires provided a demand and human perspective to this research, we wanted to ascertain whether the supplied local authority websites were providing and were accessible to the citizens. For this purpose, a web accessibility test using automated tools (Etre [37]) was carried out on randomly selected pages of the selected sample of local authority websites. This was done to check for compliance to W3C standards on Web Content Accessibility Guide (WCAG), using the standard W3C checkpoints priority levels 1 to 3 (For detail on checkpoints visit <http://www.w3.org/TR/WAI-WEBCONTENT/#Guidelines>). Note: In this paper, disability is associated with old age on the basis of the following: "Disability in old age is frequent and lowers quality of life, and demands resources for care and rehabilitation" [35]. The automated tool identified any accessibility errors associated with each level. Using this test, the W3C conformance level (i.e. Level A, Double A or Triple A) of each website was established. It was crucial that all websites satisfied the priority 1 checkpoints; hence any errors identified under this priority were to be addressed as a matter of urgency. The other two priority checkpoints, though not critical, may be addressed in order to attain optimal quality.

6.1. W3C Compliance Level Test

The web accessibility test proffered by Etre revealed that a majority i.e. 97% (29) of local authorities have attained compliance Level A, whilst 37% (11) and 3% (1) respectively, attained Levels Double A and Triple A (Figure 5). The findings from the Interviews and focus group discussions identified some quality issues with the local authority websites such as, difficulty in finding information, poor navigation, excessive volume of information on home page resulting from poor layout and categorisation. These have been identified as priority 2 and 3 issues in accordance with WCAG. Therefore, this test result indicates that most councils' websites have not attained the expected quality (i.e. at least Double A) by the users (i.e. older people).

6.2 Browser Compatibility and Load time

A further accessibility test was carried out using a second tool (Netmechanic [68]) in order to test the quality in other areas of accessibility such as browser compatibility, broken links and average load time of the web pages. It was also to allow for a validation of the compliance test conducted above.

The results revealed that most council websites i.e. 93% (28) had few broken links, if any. However, it was observed that all of them, had browser compatibility problems and the average page load time was 45 seconds (Figures 6 and 7). Browser compatibility is also a priority 2 issue in accordance with

WCAG (i.e. in relation to use of Interim solutions). Therefore this result reinforces the findings of the initial test (Etre) that indicated an expected conformance level of Double A.

Insert Figure 6 here

Insert Figure 7 here

6.3. Colour Scheme

A third accessibility test for colour scheme (i.e. priority 1 check point) was conducted using a web simulation tool (Vizcheck [99]). This tool ensures that people with colour disabilities can read the texts on the website. The results revealed that there were no issues in this area with all thirty local authority websites; hence reinforcing the Level “A” compliance result found in the initial test.

6.4. Translation

Findings from the survey highlighted the issue of translation, particularly within the ethnic and Asian origins. As a result of these findings, the websites were manually tested for web page translation functions in the absence of an automated tool. This action was undertaken in order to ensure universal usability as highlighted by [46]. The results revealed that only 23% (7) of councils had their web pages translated to other languages (Figure 8). This result could suggest that many local authorities are either unaware of the needs of the minorities or a majority of other ethnic residents or other nationals within their boroughs. This could be affecting the take-up of the online service by these residents, particularly the older ones.

Insert Figure 8 here.

7. Recommendations

One of the key success criteria for an e-government project is the take-up of the service. However, in light of the results of our study, and in order to ensure that the needs of the elderly are fully addressed along with the quality of the websites improved to increase take-up, the following measures are recommended:

- For government policymakers it is believed that local authorities should employ the use of more campaigns targeted at older adults to promote the benefits of the electronic service by using leaflets, workshops and community forums. Organisations such as Age concern should continue to assist with championing the project.
- For community centres it is recommended that more computer training centres for the elderly and silver surfer clubs should be set up. Evening and weekend training at secondary school computer laboratories can be used as alternative venues. For this, the role of grandchildren is viewed as important. Previous research has found that older adults were influenced in their decisions by the actions of their grandchildren who in some instances they viewed as addicts. However, previous research [20] has also found that grandchildren can also provide the motivation and impetus for older adults to go online: *“With regards to the records of silver surfers and children activities we sought records and off the top of their heads, the numbers were: “...on average we try to run sort of one silver surfers activity a month. On average we have 10 – 15 grand parents/children on average. All of them have had tasters of ... the silver*

surfers training and all of them do generally, not in every single case but most of the time will go on to.. continue to do something some just prefer to spend sometimes with their grandchildren on the computers and that's how they take it on. Some people will try to come back and do something useful.....Did you say 15 grand parents and about 10 children? Yeah 10- 15 grandparent/children” [20].

- Incentives such as discounts on council tax and other paid services can be used as to encourage learning and use of the online service. A scheme for free computers and broadband for the elderly needs could also be considered. This will ensure that they have the tools to keep on practising what they have learnt. Although this scheme was previously attempted by the government in 2000/2001 and encountered some problems [67] the findings of this study indicate a need for the scheme; thereby, should be reconsidered.
- For website designers it is suggested that a review of websites design is needed to ensure that it is simple enough for the elderly and reflect personalisation through the use of a separate portal for older people. An example of a simple portal for the elderly can be found by visiting www.silversurfers.net. Page translation functions should be made available on the websites. This should be undertaken if deemed financially viable following a demographic assessment of individual boroughs.
- For local authority website designers it is suggested that an agile method could be used for managing the website development projects of the local authorities. This is because, the results from the survey and interviews indicates that majority of the users only use the websites for searching information such as contact numbers for services. Therefore many of the pages that lie redundant and hardly accessed will need to be periodically reviewed and possibly removed. This will help to further simplify the websites and to deliver value. Value can be acquired by ensuring that the websites provide only information and services that are most beneficial and relevant to the users.
- For government policymakers as well as organisations striving to provide online services for the older population, it is recommended that it should be borne in mind that it is also inevitable that some older people may never use electronic service as a result of age and severe disabilities; therefore more funding should be channelled towards other non-electronic options e.g. telephone service.

8. Conclusions, Limitations and Future Directions

Global governments are providing e-government, which is a supply of online products and services; however, problems that many countries are facing is the demand and take up within citizens not being equivalent to the supply efforts. Previous researchers have identified several reasons for this namely, awareness, usefulness or costs. The aim of this exploratory research is to understand the e-government initiatives in the UK, more specifically London. For this purpose, a research approach involving both the qualitative and quantitative approaches was utilised. The qualitative approach involving focus groups and interviews provided the demand perspective, which revealed that older people do not find online products and services applicable to their current lifestyles. Further, the benefits of the Internet to many of the users are relative, depending on the age, perceptions and level of innovativeness of the user.

To apply a balanced view to this research, we also used web diagnostic tools to determine the supply aspect of e-government. It was learnt that in relation to quality, the local authority websites do contain useful and relevant information for the elderly. However, this information is difficult to access, mainly due to the lack of knowledge, or skills in the use of computers, or Internet. Other accessibility

issues specific to our participants were browser compatibility issues and the lack of translation functions for the non-English speaking citizens. The latter showed that many local authorities, although aware of equality legislations, may be oblivious to the needs of older people of ethnic origins within their boroughs or could be deterred by the financial implications. Hence, this has not been given due consideration in the design of the websites.

The websites were considered difficult to use by many older people due to difficulties in finding required information, which to the older citizen is time consuming. This is constantly proving difficult within many experienced users of computers, let alone the inexperienced or non-users. When comparing websites with the W3C guidelines, most local authorities in London were compliant with the quality standards of the W3C. This was particularly evident at a conformance level A; hence, indicating room for improvements in order to meet the expectations of the stakeholders which is on level Double A. Therefore, we felt that there should be calls for continuous quality improvement. The local authorities did not seem to have adequate engagement and collaboration with the older community, particularly in e-government projects; thereby resulting in a service which does not fully reflect their interests and expectations. As mentioned earlier

Limitations and Future Directions

We recognise that there are limitations to our study. For instance, it was very difficult to get many more people of 70 years and above to participate in the research, because many were uninterested in discussions relating to computers or technology. This was attributed to the participants feeling that they were unqualified to comment on its use. In the future using the results of this research we will attempt to overcome this challenge. We also make no claim about the sample being representative of the UK older population as a whole. Indeed it might well be interesting to explore how the opinions expressed by older Londoners compare with those expressed by older members of the community in other (rural, lower income) areas of the UK. We stated at the outset that this is an exploratory research project, which then led us to form the opinions proffered in this paper. In the future a more precise theoretical understanding will be sought by relying more on a sole research method. Other future directions include conducting more in-depth studies on the impact of grandchildren as motivating factors and impetus for older adults. Further we intend to conduct similar research to this in a future time period to make comparisons between 2010 when the government had a digital champion in position and the future when the position was dissolved to form a diverse organisation. By doing so, we anticipate that different results and a diverse understanding will emerge and reduce any future bias in results that could occur. Last but not least, whilst our research was conducted in the UK, it would be interesting to replicate the study in other countries, which differ in infrastructure, policies and culture.

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Appendix A

Q1. To which of the following age groups do you belong?

- 50 - 54years
- 55 - 64years
- 65 - 74years
- 75years above

Q2. What is your gender?

- Male
- Female

Q3. How would you describe your ethnic origin? (Please select as appropriate). *The categories used here comply with the Office for National Statistics standard

- White British
- White Irish
- Any other White background
- White and Black Caribbean
- White and Black African
- White and Asian
- Any other Mixed background
- Indian
- Pakistani
- Bangladeshi
- Any other Asian Background
- Black or Black British
- Caribbean
- African
- Other Black groups
- Chinese or Other ethnic groups
- Chinese
- Other ethnic groups

Q4. What is your current employment status?

- Employed
- Self-employed
- Unemployed
- Retired

Q5. Which of the following describes your educational level? (please select as appropriate)

- Secondary school
- College
- University graduate
- Postgraduate
- None

Q6. How would you describe your level of knowledge and experience in the use of computers?

I have no knowledge or experience of computers

I am a user with little knowledge and experience

I am a user with a lot of knowledge and experience

Other (please specify)

Q7. Do you have access to the Internet if required?

Yes

No (Go to Question 11)

Q8. Where is your Internet access?

At home

At work

Both at home and work

Somewhere else (please specify)

Q9. How often do you use the Internet?

Daily

Weekly

Monthly

Occasionally

Never

Q10. What is your main purpose for using the Internet? Please select the three most important. (Select N/A if question does not apply to you)

Work

Communication (e.g. email)

Leisure, Travel and entertainment

Seeking information on health

Seeking information on education

Seeking religious information

Interacting with government agencies

Shopping

Paying bills (e.g. rent, council tax)

Banking

Booking appointments

Motivation of mind

N/A

Other (please specify)

Q11. Do any of the following affect your use of the Internet? (Please select all that apply)

- Vision impairments (e.g. blindness, partial sighted, colour blindness)
- Learning difficulty (e.g. dyslexia)
- Motor disability affecting hands and arms
- Deafness
- Arthritis of the hand
- None

Q12. The following lists of words have been used to describe of the Internet. Please indicate to which extent you agree with these views, by ticking the relevant box.

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
Useful	<input type="checkbox"/>				
Relevant	<input type="checkbox"/>				
Convenient	<input type="checkbox"/>				
Secure	<input type="checkbox"/>				
Informative	<input type="checkbox"/>				
Empowering	<input type="checkbox"/>				
Reliable	<input type="checkbox"/>				
Affordable	<input type="checkbox"/>				
Fast	<input type="checkbox"/>				
Trendy	<input type="checkbox"/>				
Easy to use	<input type="checkbox"/>				
Adaptable to lifestyles	<input type="checkbox"/>				

Q13. What is your preferred method of interacting or communicating with your council

- Face to face contact with a council staff
- Through the use of the council's website
- Email
- Telephone service
- Letter writing
- Other (please specify)

Q14. Have you ever visited your local council's website?

- Yes
- No (Go to Question 19)

Q15. What was the purpose of your visit? (Please select as appropriate).

- Pay: Housing rent/ council tax/ Business rates/ parking permits or fines
- Book an appointment
- Searching for information or contact numbers about council services.
- Report problems e.g. Bin collection, noise, pest.
- Make a complaint
- Fill a form
- Renew library books
- Other (please specify) _____

Q16. Did you find the website useful for your purpose?

- Yes
- No
- Other (please specify) _____

Q17. Do you know your council's website address?

- Yes
- No

Q18. How often do you, or have you visited the website?

- Daily
- At least once a week
- Once every two weeks
- Monthly
- Occasionally

Q19. If you do not or have not used the council's website, which of the following reasons describes your lack of usage? (More than one answer can be selected).

- I am not computer literate
- It is too time consuming
- I'd rather speak to a person
- It is too complex to use
- Too difficult to find information
- It is not suitable for my lifestyle
- There is no one to hold accountable or make reference to.
- I don't feel secure paying my rent or council tax on the Internet.
- Other (please specify) _____

Q20. Do you feel that using the council's websites improves people's communication with the council?

Yes

No

Other (please explain) _____

Q21. The following list shows some of the services/information available on your local council website. Please indicate how often you require the use of these types of services or information.

	<i>Always</i>	<i>Sometimes</i>	<i>Rarely</i>	<i>Never</i>
Advice and Housing Benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Education and Learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environment and Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health and Social care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jobs and Careers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leisure and culture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transport & Streets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crime and Safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q22. Are there other services or information relevant to your needs that you would like to see available on your council's website? Please comment below.

Q23. Please rate the quality of your council's website following your experience of using it in relation to Information Content. If you have never used the website please select N/A.

	<i>Very poor</i>	<i>Poor</i>	<i>Average</i>	<i>Good</i>	<i>Excellent</i>	<i>N/A</i>
The website provides information that exactly fit into my needs.	<input type="checkbox"/>					
The website provides up-to-date information	<input type="checkbox"/>					
The website provides the answers to most of my inquiry	<input type="checkbox"/>					
The website provides complete information	<input type="checkbox"/>					
The website uses words that are consistent and easy to understand.	<input type="checkbox"/>					

Q24. Please rate the quality of your council's website in relation to its Usability. If you have never used the website please select N/A.

	<i>Very poor</i>	<i>Poor</i>	<i>Average</i>	<i>Good</i>	<i>Excellent</i>	<i>N/A</i>
The website is simple to use, even when using it for the first time.	<input type="checkbox"/>					
It is easy to find the information I need from the website	<input type="checkbox"/>					
I like the way the website is designed	<input type="checkbox"/>					
The website uses colours that can be distinguished and are good for the eyes	<input type="checkbox"/>					
It is very easy to move around the website	<input type="checkbox"/>					
The contents of the website are well laid out	<input type="checkbox"/>					
The website can be easily used by people with disabilities	<input type="checkbox"/>					
The website has helpful guides and instructions.	<input type="checkbox"/>					
The pages of the website including forms and documents download quickly.	<input type="checkbox"/>					

Q25. Please indicate your overall satisfaction with the quality of your local council's website.

<i>Very satisfied</i>	<i>Somewhat satisfied</i>	<i>Neutral</i>	<i>Somewhat dissatisfied</i>	<i>Very dissatisfied</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>